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ABSTRACT

This report presents an assessment and comparison of the nature and extent of general population, employee, and school fitness programs. Chapter I provides an overview of the research effort and the research questions developed as a framework for delineating issues to be examined. Chapter II identifies the generic approach used to examine the various data on physical fitness, leisure time activities, sports, and exercise in the general population, employees, and schools. This chapter also describes the data collection search process and provides a methodological review of the identified data sources and surveys. The focus of chapter III is the description and analysis of leisure time physical activity information from general population surveys. Chapter IV examines the available data concerning fitness programs sponsored by employers. Chapter V focuses on student physical activity patterns and school exercise and physical education programs. Conclusions and recommendations are presented in the final chapter. Information is given in the appendices on: the sources contacted for this study, Canadian surveys, state surveys, and survey instruments which will provide future information on physical fitness topics. (JD)

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Office of Disease Prevention and Health Promotion

ED248234

FINAL REPORT
ON
AN ASSESSMENT OF THE NATURE AND EXTENT OF COMMUNITY AND EMPLOYEE FITNESS PROGRAMS AND LEVELS OF PARTICIPATION

REPORT NO. 9

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FINAL REPORT
ON
AN ASSESSMENT OF THE NATURE AND EXTENT OF COMMUNITY AND EMPLOYEE FITNESS PROGRAMS AND LEVELS OF PARTICIPATION

REPORT NO. 9

Office of Disease Prevention and Health
Promotion

Department of Health and Human Services
September 30, 1982

The report is made pursuant to Modification 13 of Contact No. 282-78-0183-DN. The persons employed by the contractor with management and professional responsibility for the work, including the content of the report are Robert Bozzo, Charles Lupton, Nancy Ostrove, Greg Becker, and Vincent Cusenza.

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I. INTRODUCTION AND APPROACH

This report is pursuant to Article IV, Paragraph 12b of Modification 13 to Contract No. 282-78-0183-DN. It is the third of four documents, designed as a whole, to provide the Office of Disease Prevention and Health Promotion (ODPHP) with a comprehensive assessment and comparison of the nature and extent of general population, employee and school fitness programs.

This study was conceived as an alternative to the collection of primary data about employee and community programs and the associated extent of participation; such an effort was originally designed but then was disallowed by the Office of Management and Budget. The general intent of the replacement investigation is to describe and analyze from existing sources information which can enhance ODPHP's ability to direct its preventive health strategy in pursuit of the physical fitness and exercise aims set forth in Promoting Health/Preventing Disease—Objectives for the Nation.[1] The focus on community and employee fitness programs traces back to an earlier phase of this contract that identified various categories of physical fitness programs and activities supported by the President's Council on Physical Fitness and Sports. These categories were reviewed by ODPHP in the context of the fitness and exercise aspect of its prevention activities, and several were chosen for further assessment.

This report was preceded by an initial study product which described the process and results of Granville's search for sources of information. It must be noted that the search for fitness and exercise information was oriented towards identification of those sources which might permit construction of a profile of existing programs, i.e., a body of information which most closely approached a comprehensive inventory. In that context, first priority in the search and review process was accorded to broad-based data representative of the nation. That type of information most commonly exists in surveys, although other sources such as books and journal articles were not ignored. As seemingly relevant and likely sources were found, the materials were reviewed to determine their utility for the purpose of this study.

As the initial review of the data was undertaken, Granville developed major categories of information. Several of these categories (employee, community, and school fitness programs) were obvious from the stated intent of the study. However, Granville's early observation that there was much more information available about the pertinent behaviors and attitudes of the general population than about the various types of community programs led to their formal inclusion as an area of study. Since, as will become clearer as this report progresses, there have been problems in the conceptualization and use of terms in this area, it may be helpful to clarify Granville's focus. When the dearth of fitness program information was realized, Granville shifted its focus to leisure time physical activity participation, behaviors, attitudes and perceptions. However, within this broad category, most of the available information pertained to sports and exercise activities. Granville did not seek information on physical activities for either daily living activities (e.g., exercise involved in going to and from work) or on the job activities. Thus, for the purposes of this report, the term physical activity will refer to leisure time and voluntary activities. Other terms, e.g., physical fitness, sports, exercise, will be used as they are normally conceptualized in common parlance.

After the major categories were identified, Granville and ODPHP agreed that further definition could be added to the study by delineating a set of research questions to guide further efforts. These questions are listed below:

- What surveys on physical fitness, physical activity, sports and exercise exist and what surveys are planned?
- What information is available in the categories of general population, schools, employees and

communities from national and subnational surveys?

- What is the adequacy and soundness of the recent and currently available surveys?
- To what extent do the surveys show similar or dissimilar results?
- For each category of information, is it possible to identify trends?
- What are the best data among the available options?
- What data are required to fill informational gaps?
- What recommendations can be made for future data collection instruments concerning physical fitness, physical activity, sports and exercise and related programs?

On the basis of these questions, Granville proceeded to review the materials obtained from the earlier identified report on sources. The review resulted in preparation of an interim report which included examination of and commentary on the methodological aspects of the various surveys and studies to the extent that data were available. This review had the aims of identifying those sources which presented broad-based (and primarily national level) estimates of individual and program activities; determining the quality and limitations of the research designs employed, and determining the need for acquisition of more information about sampling, construction of measures, and data collection techniques to provide a complete foundation for further assessments.

The review leading to the interim report also included extraction of pertinent data items to identify and compare the results of the various surveys and studies. For each of the major categories of information, it was necessary to develop subcategories of pertinent issues in order to present the relevant data. In presenting the data, Granville commented on the similarities and dissimilarities in the data with reference to some of the design or contextual features of the surveys as they might have accounted for variation in the estimates, and noted apparently strong or weak approaches to the particular issues. In other words, the interim report represented a first examination of the various sources which had been identified earlier. Sources found lacking in quality or relevance were weeded out, items requiring more information were identified, the study team gained a sense of the range of and basis for existing estimates, and a pathway to further assessment activities was more clearly marked.

The revision of the interim report and its conversion into this final report included several steps. First, telephone follow-ups were made with several of the survey organizations to gather information about design, sampling and administration procedures which had not been supplied in the original reports. This allowed final judgments to be made about the adequacy of the procedures utilized in those surveys.

Second, following consultation with ODPHP staff regarding the issues of greatest interest to them, the final reviews and analyses of the data were undertaken. Data presented in the interim report were closely examined to determine whether convergence existed or not. In some cases, only general statements could be made about convergence, or its absence, due to differences in questionnaire design, contextual aspects, or methodological factors. For key issues, estimates of behavior and attitudes were broken down by particular subgroups (age, sex, income) wherever such disaggregations were feasible. Each of the chapters on general population, employees and schools data contains a summary of the findings from the secondary data sources.

Third, the final step consisted of the description of findings and development of recommendations. For each of the target groups, the overall availability and usefulness of the data were discussed in terms of sampling procedures, information gaps, and deficiencies. The ultimate result of the analysis is a prescriptive set of recommendations for ODPHP regarding the collection of information for its program development and monitoring and surveillance activities. This includes a proposed version of a general population questionnaire, with recommendations concerning basic questions, supplementary questions and associated demographic information.

In addition, Granville has included appendices containing information on extant Canadian surveys, on existing state surveys, and on surveys that will provide physical activity and in data the near future.

II. METHODOLOGICAL APPROACH AND REVIEW

INTRODUCTION

This chapter identifies the generic approach used to examine the various data regarding physical fitness, leisure-time physical activity, sports, and exercise in the general population, employees and schools. The general desire was to determine the extent to which the available data were convergent. In addition, this chapter describes the data collection search process and then provides a methodological review of the identified data sources and surveys.

METHODOLOGICAL APPROACH

It was thought originally that the technique of meta-analysis might be appropriate to the evaluation of available data. Meta-analysis, as developed by Glass and others,[1,2] requires the collection of a body of research which speaks directly to a particular substantive issue and which provides statistical data amenable to mathematical integration with similar data. However, the variety of purposes of physical fitness and activity studies, as well as the even somewhat more restricted variety of methods utilized, did not lend themselves to the rigorous kind of review called for by the meta-analysis technique.

Upon further perusal of this document, the reader will see that the nature and type of data collected on physical fitness and physical activity lend themselves best to low level models of meta-evaluation (see Cook and Gruder,[3] especially model two). Given the data limitations, it appeared more prudent to view the current effort from the perspective that it could best provide a broad integrative review of available studies.

Several tasks in performing and reporting the results of integrative reviews were laid out by Jackson[4] (1980). These included a clear delineation of research questions, the search process used to collect information, and the methods used to represent and analyze the data. In Chapter I, the research questions which directed this study have already been identified. Subsequent sections of this chapter describe the data collection search process and review the methodological approaches used by the various data sources. As it turns out, the general population surveys receive the majority of the attention since they used much more rigorous sampling methodologies than did employee fitness program or school physical activity studies and hence are more clearly generalizable. Data representation and analysis is presented in Chapters III to V for the general population, employees and schools, respectively.

DATA COLLECTION APPROACH

In the search for general population, employee and school physical fitness and physical activity information, a variety of approaches were used to insure the collection of the most complete set of physical activity information possible. First, through Granville's previous work for ODPHP on fitness and sports topics, a number of pertinent documents had been obtained or reviewed. Two examples of relevant work included a recent comparative assessment of fitness and sports promotion in the U.S., Canada and Australia and the design of community and employee fitness program surveys.

Second, based on prior work in the field, Granville had contacted or was aware of the major organizations having a primary interest in the subject of physical fitness (e.g., the President's Council on Physical Fitness and Sports). These organizations were contacted to obtain whatever additional documents they were aware of which contained physical fitness and physical activity data not already on hand, and to learn of other organizations and individuals that might have useful information. Leads obtained in this fashion were followed up until all identified organizations had been contacted.

Third, in an networking procedure similar to the activities described above, other sources of information were sought from organizations and individuals with more peripheral or less well-known interests in physical fitness, physical activity, sports exercise, and other forms of physical recreation. These included private companies as well as organizations and associations with more generic interests in health, employees or schools (e.g., Fitness Systems, Inc., the American Public Health Association, and the American Health Foundation). Appendix A contains a list of all sources contacted for information.

The fourth and final element of the identification process included the use of several bibliographic searches. DIALOG is a grouping of numerous computer-based information listings covering a wide range of technical and social science areas. The Project Officer filed a formal request for a DIALOG search at the DHHS library. The request called for a search covering 1980 and 1981 based on the following key words: community fitness, employee fitness, recreation programs, physical education in schools, and physical fitness. The DIALOG search produced a listing of numerous articles and reports, but little in the way of surveys, large experimental studies, or program/facility inventories. Recall that the purpose of the community and employee fitness programs surveys was to provide a status report, i.e., baseline data, on the current prevalence of and participation in programs run by community agencies and employers, as opposed to reviewing the results of small scale experimental research or curricula/program approaches thought to be exemplary and described in journal articles. The most promising sources (on the basis of the titles and abstracts provided by DIALOG) were followed up to see whether they contained useful information or references.

To supplement the DIALOG search, another computer search was done at the Library of Congress. That effort yielded similar results. Other elements of the search process included a review of the bibliographies of health indexes published by NCHS. Those bibliographies are based on computerized searches of SIDLINE and

HEALTH, two of the National Library of Medicine's online data bases. Among the Medical Subject Headings used were health status indicators and health surveys. A review of the Index Medicus under the key words physical fitness, recreation, and exercise also was conducted. Finally, we scanned the holdings of the Social Science Research Council's library, since its materials deal largely with social indicators.

METHODOLOGICAL REVIEW

The search described above resulted in Granville's acquisition of a set of studies designed to assess—either as a major focus or a supplementary topic—aspects of physical fitness and leisure time physical activity. Prior to addressing the actual responses obtained by these studies—for example, what percentage of the population engages in regular physical activity—the overall adequacy of the relevant studies will be reviewed to provide a general context within which such specific data can be discussed more clearly.

In pursuit of this end, each of the studies for which methodological information has been at least partially acquired by Granville will be evaluated on the following criteria:

- Sample design, including population/generalizability, location, and size
- Implementation/method of data collection
- Recency—year(s) of conduct
- Questionnaire context
- Limitations relating to data reporting.

It should also be noted at the outset that there are three basic types of studies that are relevant as secondary data sources. First, the bulk of the studies are general population surveys which can be compared with each other with relative ease. In any case, this is true for surveys of the United States population. On the other hand, it is not feasible to compare U.S.

population surveys of the population of Canada, Ontario, or individual states in the U.S., all of which were also located during our search for physical fitness program and activity information. Therefore, we have included brief discussions of surveys of part or all of Canada in Appendix B, and of a number of individual states in Appendix C.

A second set of studies includes surveys of school and private sector organizations. These surveys were designed to identify the type and prevalence of physical fitness, sports, and exercise programs. Unfortunately, it was the case for both of these groups that the purposes for which the information was collected did not dictate use of the kind of rigorous methodological care attempted by those conducting the general population surveys. Specifically, the surveys dealing with employee fitness programs utilized limited sampling frames in the context of selecting non-probability, purposive samples. The surveys of school fitness activities were conducted, by and large, by national school associations which failed to include validation checks, and provided no information about response rates or about the extent of their membership; hence, once again, the sampling frame is unknown. In summary, the best conclusion we can reach concerning this second type of survey is that the information gleaned, although not held to be representative of the total population of schools or employers, provides some general notions about the kind of programs in existence and their approximate penetration. In passing, we should also add that the above qualifications also apply to the YWCA and YMCA surveys of their member associations' physical fitness programs.

The third type of study utilized longitudinal designs to assess specific outcomes (e.g., mortality) as a function of physical activity for a selected population. A critique of these latter studies will be provided in a separate section in this chapter since almost no overlap exists between both the sampling or study procedures used in the outcome studies and the general population surveys.

This chapter is organized to address in turn the attributes of surveys of the general population and longitudinal outcome studies which are relevant to the physical fitness and physical activity behaviors of the general public. Because of the previously noted general lack of appropriate procedures to ensure the acquisition of representative samples or valid data in the second category of surveys reviewed (employer and school fitness programs), further critique in this chapter does not appear to be necessary. Where appropriate, additional information about data collection methods will be included in the chapters which deal specifically with the results of these surveys.

Data from Surveys of the General Population

The survey data sources to be evaluated on the criteria enumerated above include:

- Family Health in an Era of Stress[5]—conducted by Yankelovich, Skelly and White for General Mills, 1978-79
- Fitness in America[6]—conducted by Louis Harris and Associates for Perrier, 1978-79
- Health Maintenance[7]—conducted by Louis Harris and Associates for Pacific Mutual Insurance Co., 1978
- National Adult Physical Fitness Survey[8]—conducted by Opinion Research Corporation for the President's Council on Physical Fitness and Sports, 1972
- Wave I of the National Survey of Personal Health Practices and Consequences[9,10]—conducted by Chilton Research Services for the National Center for Health Statistics (NCHS), 1979, on behalf of ODPHP
- Wave II of the National Survey of Personal Health Practices and Consequences—NCHS, 1981 (results are presently unavailable), on behalf of ODPHP
- Physical Exercise Survey[11]—conducted by the Roper Organization, 1982

- Exercise Poll[12]--conducted by the Gallup Poll, 1977 and 1980
- Third Nationwide Outdoor Recreation Survey[13]--conducted by Opinion Research Corporation for Heritage Conservation and Recreation Services, 1977
- Supplements to the Health Interview Surveys[14,15]--NCHS, 1975 and 1977
- Second Health and Nutrition Examination Survey (HANES II)--NCHS, 1976-1980 (results are currently unavailable)
- Sports Participation Surveys[16,17]--conducted by A.C. Nielsen, 1973, 1976, 1979, 1982.

Sample Design. Probably the most important component of a sound piece of survey research is the acquisition of an adequate sample. A good sample should be both representative, and of a sufficient size to allow reliable estimates of population parameters.

A sample should be of a sufficient size to allow generation of precise estimates of population parameters at the .95 confidence level which is accepted as traditional in the social sciences. Using simple random sampling without replacement, the identification of an appropriate sample size is specified by the following formula:

$$\text{var}\ (x) = z \sqrt{\frac{p(q)}{n-1}}$$

where var (x) = the expected sampling error about the estimate of some variable—expressed as a proportion, p = some proportion of the sample displaying a certain characteristic or attribute, q = (1-p), z = the standardized normal variable—given a specified confidence level (for .95, z = 1.96), and n = the size of the sample. Given the most conservative estimate of a population breakdown for a dual-alternative attribute—i.e., 50-50--a sample size (n) of 384 would ensure a population estimate which would

EXHIBIT II-1

SAMPLE SIZE, AGE RANGE AND SAMPLING DESIGN USED IN SURVEYS OF THE GENERAL POPULATION

URVEY YEAR CONDUCTED)	SAMPLE SIZE[1]	AGE RANGE OF ELIGIBLE RESPONDENTS[2]	SAMPLING DESIGN
oper Organization hysical Exercise Survey 1982)	2,000	18 and older	Multistage strat-ified cluster
allup Poll 1977 and 1980)	1,500-1,550	18 and older	Multistage strat-ified cluster
econd Health and Nutrition xamination Survey 1976-1980) (HANES II)	20,325	6 months - 74 years[3,4]	Multistage strat-ified cluster
ational Survey of Personal ealth Practices and Conse- uences (1979)	3,025	20 - 64 years	Multistage strat-ified cluster
eneral Mills merican Family Report 1978-79)	1,254 Families	Primary respondents 18 and over Teenage children— 12-17 years	Multistage strat-ified cluster
errier's Fitness in merica (1978)	1,510	18 and older	Multistage strat-ified cluster
ealth Maintenance 1978)	1,517	18 and older	Multistage strat-ified cluster
CHS Health Interview urvey Supplements (1975, 977)	Approx. 12,000 (1975) 23,000 (1977)	20 and older[4]	Multistage strat-ified cluster
ielsen's Sports Partici- ation Surveys (1973-1982)	Varied[5]	Unavailable	Multistage cluster
hird Nationwide Outdoor ecreation Survey (1977)	4,029	12 and older	Multistage strat-ified cluster
ational Adult hysical Fitness Survey 1972)	3,875	22 and older	Multistage strat-ified cluster

FOOTNOTES

1 - The sample consisted of both male and female individuals unless otherwise noted.

2 - Unless otherwise specified, the sample is designed to be representative of non-institutionalized adults in the continental U.S.

3 - An oversample of younger (6 months - 5 years) and older (60 - 74 years) was obtained.

4 - Included Alaska and Hawaii

5 - 1979—3,003 households, 9,019 individuals (2/3 answered by proxy)

fall with 95 percent confidence, within ±5 percentage points of the true population value. All of the general population surveys reviewed utilized samples large enough to ensure even greater precision than the minimum standards specify; at least this is the case when the entire sample is considered as the base. On the other hand, we need to be attentive to proportions measured on subsamples, e.g., where only those not engaging in regular exercise are queried regarding their reasons for lack of participation. In some cases, the base (subsample) on which population estimates are calculated is not specified, and therefore the sampling error cannot be estimated. Instances resulting in this kind of uncertainty will be discussed as they arise for particular research questions/survey items. Additionally, any problems associated with utilizing adjusted percentages—or "repercentaging"—and thus losing part of the sample, will be dealt with on a case-by-case basis.

The second major consideration related to sample design involves the representativeness of the sample. Few circumstances arise where there is in fact no desire to generalize from the sample to the population; in such cases, the representativeness of the sample is not a concern. However, where the need to generalize does exist, as is most often the case, investigators must utilize a sample selection methodology which will ensure that capability. In addition, it is incumbent on the survey researcher to report both the population for which the sample was to be representative, as well as any limitations which should be placed on the generalizability of the data which might be caused by such uncontrollable cirumstances as, for example, non-response bias.

The surveys reviewed herein reported the utilization of methodologies, generally based on area probability sampling, which produce good representative samples. The majority employed some form of multi-stage stratified cluster sampling technique. Exhibit II-1 provides an indication of the sample selection technique employed by the different studies and graphically reveals the general congruence of this aspect of the methodologies utilized. This is not to imply that identical procedures were followed however. For example, the Health Interview Survey supplements conducted by the NCHS, as well as the Second Health and Nutrition Examination Survey (HANES II), utilized U.S. Census enumerated data and census personnel. This provided them with exact enumeration and a predetermined list of households for which no substitutions were accepted; this resulted in a more conservative strategy for these studies compared with the studies conducted by private firms. (Substitution procedures will be discussed more thoroughly below.) In addition, different studies utilized different stratification categories or stratifiers as a function of the goals pursued by the organizations conducting the surveys. In the case of Nielsen's Sports Participation Surveys, modified random-digit dial procedures were used without stratification. However, Nielsen also made post-hoc comparisons with available census figures to check on the regional and other demographic comparativeness of their samples and post-stratified where appropriate.

For the most part, stratification and clusterings were developed to yield samples of representatives of individuals living in private households in the continental United States. Excluded therefore were individuals living in an "institutionalized" setting—e.g., those in prisons, hospitals, barracks, and school dormitories. However, in the case of the Gallup Poll, the HANES II and the Health Interview Survey (HIS) supplements, a full 50 state sample was employed.

Face-to-face (in-person) interviews were conducted by all except the National Survey of Personal Health Practices and Consequences, Nielsen's 1973-1979 surveys and the Third Nationwide Outdoor Recreation Survey. Because data indicate that individuals living in households without a telephone are of lower income than those with telephones, a small bias might be expected. However, it is also the case that telephone interviews, when utilizing random digit dialing techniques rather than published phone lists, reach in excess of 95 percent of the population. This fact, in conjunction with the ever-increasing difficulty that household interviewers have in gaining entrance to the homes of elderly and poor individuals, results in a trade-off in potential biases and the conclusion that well-done telephone interviews provide data of comparable quality to that provided by in-person interviews.

As noted previously, although minor variations from one organization to another in choosing the sampling clusters were noted, a review of previous integrative research indicates the comparability of samples generated by these different techniques, provided a sufficiently broad base is utilized (Martin, McDuffee, and Presser, 1981). However, a couple of additional points concerning the comparability of the samples need to be clarified.

First, limitations should be noted for two of the surveys--i.e., General Mills American Family Report and the Nielsen Sports Participation Survey. The General Mills' Report was concerned with the family unit, rather than with individual respondents, and therefore used a different sampling unit (the family) than the other surveys. These in-person interviews with a head-of-the-household primary respondent also entailed, wherever possible, the collection of self-administered questionnaire data from spouses and teenage children. Clarification by the organization which conducted the survey of how these supplementary data were treated revealed that the problem of intact groups was circumvented by reporting individual data only from the primary respondents and specifying in the tables when supplementary data were being utilized.

The 1979 Nielsen Survey also collected data about aspects of physical fitness from more than one person in a household. Although they interviewed 3,003 household heads, the sports participation habits of 9,019 persons living in these households were assessed. The aggregated data available to us in report form were based on the individual participants, therefore avoiding the potential dual problems of intact groups and inaccurate reporting on other family members' participation habits.

Second, we note in passing that the U.S. HIS supplements probably contain data from more than one person per family in households containing four or more members, because a systematic selection procedure was used to ensure that all sample persons in the HIS itself had a 33 percent chance of being included in the supplements "sub-samples." Therefore, although the data set does not contain a large number of values for individuals from the same household, at least a few are contained in it.

Another consideration related to the representativeness of samples relates to the ages of the sampled individuals. Although not overtly so expressed, many of the studies were mainly concerned with adult attitudes and behavior. However, the definition of adult can vary from organization to organization and thus so will the breadth of ages of the individuals surveyed. Exhibit II-1 presents, along with the aforementioned design information, the age ranges (where supplied) for the individuals surveyed in each study, together with the size of the sample.

In summary then, we can conclude that the studies reviewed utilized, despite minor variations, methodologically sound sampling techniques. Congruent with this, the surveys also collected samples of sufficient size to enable precise, confident estimates of population parameters, even when additional breakdowns were utilized.

Implementation/Method of Data Collection. Another consideration in the evaluation of the adequacy of surveys revolves around the specific procedures followed in collecting the data. The three basic methods of survey implementation--mail, telephone, and face-to-face--differ in a number of ways, some of which can affect the representativeness of the sample, others which may affect the nature of the responses.

Fortunately for the issue of representativeness, those studies which reported utilizing telephone interviews employed methods of random-digit dialing, thus avoiding problems associated with usage of published lists of telephone numbers. Since the remainder of the surveys utilized face-to-face interviews with individuals chosen as a result of area probability sampling, on the surface they also would appear to be free of representativeness problems. However, the procedures for substituting respondents when designated sample persons cannot be reached vary from organization to organization. Although the influence of this potential threat to representativeness is not as great in the case of face-to-face household interviews, where substitution is normally made from the same neighborhood (presumably homogeneous with respect to inhabitant characteristics), this information was sought out from the conducting organizations since it was not available in published reports. Except for the HIS Supplements, HANES II and the National Adult Physical Fitness Survey, the remainder of the surveys that utilized a face-to-face format employed a straight substitution procedure; if no one was home at a particular household, the interviewer moved on to the next designated residence. The Health Interview Surveys however employed a no substitution procedure; following failure of the Census interviewer (described by one government employee as "exceptionally persistent") to locate a household member within the designated period of time, a no-response indication was recorded. The sample was later adjusted for non-response at the segment (4 household) level. Since the HANES II procedure entailed having the sample person travel to another location (an appropriately medically equipped trailer) for examination, the callback issue is even more convoluted. Once again though, no substitutions were used in choosing households from which sample persons were selected, and as many reschedulings of examination appointments as seemed feasible were made. Two callbacks were reported to have been used in the National Adult Physical Fitness Survey; however, the ultimate response rate was not available.

With regard to the three surveys which utilized telephone interviews, between three and five callbacks were attempted before a non-response was recorded. Five callbacks for Wave I of the National Survey of Personal Health Practices and Consequences ensured an 81 percent response rate. For Nielsen's 1973 through 1979 surveys, only three callbacks were made (response rates were not available). The Outdoor Recreation Survey reported that up to four callbacks were made if a selected number resulted in no answer and reported only a 54 percent response rate. Although the authors asserted that the corresponding 46 percent refusal rate "is common for telephone interviews", such an assertion would be considered untenable by most professionals in the field of survey research. In fact, such a response rate raises serious questions about the representativeness of the final sample. Specifically, as the authors suggest, their sample may very well have been skewed toward a larger percentage of individuals who are most active and interested in outdoor recreation, and hence, in physical activity.

Validation Procedures. Another issue revolving around survey implementation is that of validation of survey responses. Specifically, in an ideal world, there would be no reason to ever doubt anyone's word. However, in fact, we do not exist in that world. Therefore, there is a need to "check up" on people--regarding both whether the interviewers actually performed the interviews and whether the responses they recorded accurately reflected what the participant said. In fact, some kind of validation procedure or monitoring was utilized for all of the surveys reviewed. Exhibit II-2 contains this validation information in detail.

Questionnaire Context. One final consideration to keep in mind, also related to the possibility of overall response inaccuracy, brings us to the issue of the context in which the questions of interest to ODPHP were asked. Face-to-face interviews have a higher probability than telephone interviews of provoking socially desirable answers as well as a higher tial for leakage of interviewer bias in phrasing questions. The emphasis on being or becoming physically fit, which has been steadily growing for the past several years, may have led to more people admitting to engaging in such activities than actually do so. After all, it is the fashionable thing to do. We might therefore expect this potential inflation of actual rates of participation to be higher

EXHIBIT II-2

METHODS RELATING TO SURVEY IMPLEMENTATION

SURVEY (YEAR CONDUCTED)	TYPE OF INTERVIEW	REPORTED CALLBACK/ VALIDATION PROCEDURES	SURVEY CONTENT
per Organization Physical ercise Survey (1982)	Face-to-face	Straight substitution/ approx. 15% phone validated	Caravan-divorse topics
llup Poll (1977 and 1980)	Face-to-face	Straight substitution/ random phone validation	Personal Omnibus Survey-diverse topics
NES II (1976-1980)	Face-to-face	No substitution/no set validation procedures-some on-the-spot supervision	Questions asked during 1-3 hour interview/health examination
tional Survey of Personal alth Practices and Conse- ences (1979)	Telephone	At least 5 callbacks/ standard monitoring is approx. 10%	Self-reported health status and numerous health practices
neral Mills' American mily Report (1978-1979)	Face-to-face	Straight substitution/ approx. 20% phone validated	One of nine topics concerning family health
rrier's Fitness in America 979)	Face-to-face	Straight substitution/ 15% phone validated	Fitness behaviors
alth Maintenance (1978)	Face-to-face	Straight substitution/ 15% phone validated	Health maintanance and preventive medicine
HS Health Interview Survey pplements (1975,1977)	Face-to-face	No substitutuions/10% reinterview	All areas of health (in major interview)
elsen's Sports Partici- tion Surveys (1973-1982)	Telephone (Face-to-face in 1970 only)	1973-1979 up to 3 callbacks/monitor approx. 10%	Participation in sports
ird Nationwide Outdoor creation Survey (1977)	Telephone	Up to 4 callbacks/validation through on-the-spot supervision	Focus on outdoor recreation
tional Adult Physical tness Survey (1972)	Face-to-face	2 callbacks/12% validation by phone or supervisor	Caravan survey-diverse topics

in face-to-face interviews and also be exacerbated in surveys which were centered around physical fitness, as opposed to omnibus surveys or surveys which devoted only a small portion or a few questions to physical fitness activities.

Exhibit II-2 also presents the interview method and the general context in which questions about physical activity were raised.

Other Limitations. Finally, we need to keep in mind that the HANES II procedure entailed identifying persons willing to undergo a rather thorough physical examination as well as a lengthy questionnaire interview and specified an over-sample of both younger (6 month-5 years) and older (60-74 years) age groups. The comparability of this sample is not possible to judge at this point however, because the final data are not yet available.

Outcome Studies

At the outset, it should be noted that the purposes which underlie the outcome studies to be reported herein differed considerably from those for which the general population survey studies were conducted. Specifically, the survey studies were concerned with assessment of the extent to which certain patterns of attitudes or behavior were descriptive of the population; thus, purely descriptive concerns were paramount, and no particular need was evinced to pursue in a vigorous manner an in-depth understanding of the influences on—or variables related to—these patterns. On the other hand, such an understanding of influences on patterns of behavior or attitudes would presumably provide a better grasp of the causal network surrounding these patterns, and therefore, eventually permit manipulation of such causal variables for both the purposes of validating applied and theoretical hypotheses and intervening in the process to provide improved outcomes.

The studies discussed in this section utilized a methodology designed to identify the relationship of specific patterns of personal behavior to general health and mortality. Paffenbarger and Hale (1975) and Paffenbarger, Wing and Hyde (1978) respectively followed longshoremen whose jobs necessitated differential levels of activity, and Harvard graduates' self-reported physical activity levels, and related these activity levels to mortality rates from coronary heart disease (CHD). Their purpose was to test the hypothesis that, over a period of years, physical activity levels which provide the kind of cardiovascular conditioning suspected of protecting individuals from CHD, in fact are related to mortality. The longitudinal methodology employed by these investigators provided sufficiently large groups with which to test their hypotheses, and the procedures utilized in following up the status of the individuals over the course of years resulted in a relatively low rate of attrition.

Paffenbarger and Hale's (1975) 22 year study of longshoremen followed 6,351 men from identification through to death, retirement at age 75, or end of observation. Only 1 percent of the group was lost for "other reasons." Probably the most serious limitation to inferring causation from their data lies in the fact that transfers from work involving heavy activity could be had, just by stating a preference for such, following a minimum of five years of employment. Therefore, those remaining in "heavy-duty activity" jobs did so by choice; the fact that they differed in mortality from those in moderate and light activity jobs could be a function of predisposition toward enjoying vigorous activity, rather than the activity itself, or even a function of physical capacity, which is possibly related to a physiological predisposition toward gettting CHD.

Similarly, results from the Paffenbarger et al. (1978) study of 16,936 Harvard male alumni, demonstrating reasonable (71-82 percent) response rates and follow-up procedures, is also limited by the self-selected nature of the group under study. In addition, both of these studies provide conclusions which must be considered to be limited to males, especially given differential mortality rates from CHD for males and females.

Another set of studies dealing with the relationship of patterns of behavior with specific health outcomes came out of the Human Population Laboratory in California. A longitudinal study of the physical health status of 6,928 citizens of Alameda County, California was initiated in 1965 and based its findings on a questionnaire return rate of 86 percent of the enumerated stratified probability sample of adult residents 20 years or older (or 16 years or older if married). Mortality follow-ups at 5 and 1/2 and 9 and 1/2 years were performed. At the 9 and 1/2 year follow-up, 78 percent of the presumed survivors of the original group (85 percent of second questionnaire recipients) returned a second questionnaire that requested almost identical information to that in the original questionnaire. Analysis for possible non-respondent bias indicated that those who had died within the 9 and 1/2 years as well as second questionnaire non-respondents and those who could not be located at that time had slightly lower health practice scores (Breslow and Enstrom, 1980). Also, Wiley and Camacho (1980), reporting on white respondents under 70 years of age, as compared with dropouts (second questionnaire non-respondents), revealed differences with regard to sex, age, socioeconomic status and initial (1965) health practices. However, further analyses revealed a parallel in the relationship of health practices to health status for both survivors and dropouts, thus minimizing the seriousness of the bias, at least for the authors' purposes.

The Alameda County investigations provide information more representative of the general population than the Paffenbarger et al. work, (discussed in the next chapter), but are still limited in terms of generalizability to the population at large because of climatic, socioeconomic and other factors likely to distinguish Alameda County residents from residents of other areas of the United States. However, should additional, similar investigations be conducted and provide congruent data, our belief in the generalizability of the data obtained would be greatly enhanced.

SUMMARY

On the whole, the general population surveys identified for inclusion in Granville's secondary data source review and integration appear in general to be adequately designed and implemented. However, differences in the ages of the individuals sampled and the context in which questions were asked limit the absolute comparability of the responses obtained. This general conclusion also fails to discuss more specific differences in the wording of questions which are also likely to contribute to non-comparability of results. These additional considerations will be discussed in sections to follow.

The outcome studies reviewed, while not constituting the full range of studies relating exercise and health, nonetheless were those which utilized the largest sample sizes; they were generally well designed and executed, especially with regard to the tracking of large numbers of individuals. Beyond the methodological issues surrounding the execution of the studies though, their real limitations center around the generalizability of the results because of the employment of restricted samples. The Paffenbarger et al. studies are especially limited in generalizing to a full half of the population (i.e., women), whose physiologies and life spans are demonstrably different from those of the individuals studied (i.e., men). Similarly, the Alameda County studies utilized a population exposed to restricted climatic and cultural environments and are hence not confidently generalizable.

III. PHYSICAL FITNESS AND EXERCISE INFORMATION FOR THE GENERAL POPULATION

INTRODUCTION

The description and analysis of leisure time physical activity information from general population surveys is the focus of this chapter. In all, 13 surveys (identified in Chapter II) provided useful information for the purposes of identifying the current level of physical activity, sports and exercise involvement, attitudes, and programs. Information from 1975 on is used to establish the current status of such activities. For additional trend data, Granville went back as far as the 1972 National Adult Physical Fitness Survey conducted by Opinion Research Corporation for the President's Council on Physical Fitness and Sports.

Information on outcomes was not available from any of the general population surveys. Consequently, Granville presents information on studies selected from the literature on physical activity and exercise. Such data come from studies in Alameda County, California and from studies by Dr. Ralph Paffenbarger and associates.

Finally, as was discussed in Chapter II, information from Canadian and individual state surveys has been reserved for inclusion in Appendices B and C (respectively). If the data from the individual states had provided better information, been better collected, or had broader applicability, they would have been presented within this chapter. Unfortunately, they do not. The Canadian survey data were not included in this chapter simply because they deal with a different population group than was the focus of this study. Thus, its results do not provide useful and comparative data.

This chapter has been divided into the following sections for description and analysis:

- Physical Activity Behavior
- Reasons for Physical Activity Behaviors
- Attitudes and Perceptions Regarding Physical Activities
- Changes in Physical Activity Patterns
- Information Aspects Related to Physical Activity
- Physical Fitness Programs
- Outcomes Related to Participation in Physical Activity.

PHYSICAL ACTIVITY BEHAVIOR

This section of Chapter III provides a great deal of information from general population surveys on actual physical activity and exercise behavior. The section is divided into the following groups:

- Regular Participation in Physical Exercise (with demographic breakouts)
- Participation by Type of Activity
- Time Spent on Exercise and Sports
- When Did An Individual Begin to Exercise Regularly?
- Single Exercise Participated in Most Often
- New Activity Starts
- Use of Leisure Time
- Consultation with Physician Regarding Exercise.

Regular Participation in Physical Exercise

The most common question among the surveys was whether the respondent engaged in regular exercise. Five surveys asked this question providing the results shown in Exhibit III-1. Between 36 and 59 percent of the general population reported that they exercised regularly.

EXHIBIT III-1

PERCENT PERSONS WHO REPORTED REGULAR PHYSICAL EXERCISE FROM FIVE SURVEYS

	Involved in regular exercise	Not involved in regular exercise	Not sure and other responses
Perrier - 1979	59	41	—
Health Maintenance - 1978	37	62	1
General Mills - 1979	36	64	—
HIS - 1975	48.6	51.1	0.3
Gallup - 1980	46	54	—

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* Of the 48.6% regular exercisers, HIS data show tha 55% pursue only one type of exercise, 26% pursue two types, and 19% pursue three or more.

The Perrier results are the highest, but this is understandable since the question asked about regular exercise "at any time during the past year." Since many activities in which people engage are seasonal and since we expect that at any specific time there are fewer individuals exercising regularly than would report regular participation at any time of the year, we expect that the wording of the question is likely to have produced an inflated rate of "regular" exercise participation. Furthermore, both Perrier and HIS prompted survey respondents with a list of physical exercise and sports activities. This too may have had the result of increasing the level of response to this question.

In contrast, both the General Mills and Health Maintenance surveys asked about regular exercise in ways that could reduce the number of persons responding positively. In the case of General Mills, its question asked about planned physical exercise at least several times per week. Both the planned nature of the exercise and the requirement for several exercise sessions per week undoubtedly reduced the reported level of regular exercise. In the case of Health Maintenance, survey respondents were asked about regular exercise "at the present time." By focusing on a person's current status, the level of positive responses would have been diminished compared to the Perrier survey which asked about physical activity over the past year. The HIS survey question did not explicitly tie its respondents to any time period; however, the context of the regular exercise question implied a current frame of reference.

In the case of the Gallup Survey, respondents were asked "Aside from any work you do here at home or at a job, do you do anything regularly--that is on a daily basis--that helps you keep physically fit?" Unfortunately, because of the manner in which the question is worded, what was being asked for is very vague. Arguing for the rigorousness of the question, "on a daily basis" was specified. On the other hand, the ambiguity of doing "anything regularly" leaves the type of activity considered relevant (as long as it's not work-related) largely to the imagination of the respondent. Hence, it's possible that people who exercise regularly three times a week responded "no" to the question (because it's not done daily), while others who perceived general walking about, climbing stairs, or engaging in sexual activity as activities which keep them physically fit answered "yes." In other words, the apparently high 46 percent answering in the affirmative to this question is extremely difficult to interpret.

Given the above discussion, we can conclude that, in general, justifiable reasons for the differences exist. The results that come from the five surveys appear to provide alternate perspectives on the overall picture of regular exercise by the general population. General Mills and Health Maintenance results focus on persons who are most consistently involved in sports and exercise while Perrier results incorporate persons who are involved in such activities on a more intermittent basis. The HIS results fall into the middle of the range with its question which is not overly specific or vague, and the ambiguous wording of the Gallup question permits no easy determination of the meaning of the results obtained.

Demographic Breakdowns

For the five surveys above, the demographic breakdowns which were provided are presented in Exhibit III-2.

Age. In examining information on age breakdowns from the various surveys, one finds that no two of the surveys used the same categories. Exhibit III-3 below shows the age categories used in the surveys. As can be seen, four of these surveys sampled persons age 18 and over while the 1975 HIS sampled individuals age 20 and older.

Since the surveys generally did not use consistent age categories, it is difficult to make specific comparisons across all the surveys. Instead, general statements about the trend of involvement in regular exercise must suffice. All of the surveys showed that the percent of persons involved in regular exercise

EXHIBIT III-2

DEMOGRAPHIC BREAKDOWNS FOR SURVEY QUESTIONS ON REGULAR EXERCISE

	Perrier	Health Maintenance	General Mills	HIS	Gallup
Age	X	X	X	X[1]	X
Sex	X	X	X	X	X
Race		X		X	X
Income socio-economic status	X	X	X	X	X
Family Composition		X			
Type of place of residence	X		X	[2]	X
Region	X			X	X

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[1] Additional age disaggregations for the 1975 HIS survey are provided in public use tapes available from the National Center for Health Statistics (NCHS).

[2] Information on type of place of residence for the 1975 HIS survey is provided in public use tapes available from NCHS.

EXHIBIT III-3

PERCENT PARTICIPATION BY AGE CATEGORIES FOR FIVE SURVEYS

PERRIER		HEALTH MAINTENANCE		GENERAL MILLS		HIS-1975		GALLUP	
Category	Percent Regular Exercisers	Age Category	Percent Regular Exercisers	Age Category	Percent Rgular Exercisers	Age Category	Percent Regular Exercisers	Age Category	Percent Regular Exerciser
18-24	75	18-29	51	18-34	41	20-44	54	18-24	66
25-34	68	30-49	33	35-44	32	45-64	43	25-29	53
35-49	51	50 and Over	30	45-64	31	65 and Over	42	30-49	41
50-64	42			65 and Over	39			50 and Over	39
65 and Over	26								
TOTAL	59	TOTAL	37	TOTAL	36	TOTAL	49	TOTAL	46

declines with age. Examining the youngest age group first, the Perrier survey showed the greatest involvement in regular exercise for the youngest (and smallest) age category at 75 percent, while the General Mills showed the least (41 percent) for the youngest (but larger) category. As pointed out previously, based on the way Perrier asked about regular exercise, their results can be expected to be higher. It may also be the case, although such an explanation cannot be tested empirically, that the contextual characteristics of the Perrier survey—the only one of the five where the major focus was on exercise—were more impactful for the younger respondents in directing their attention toward what would be the most "socially desirable" answer.

On the basis of their question format and overall low rate of regular exercisers, one would expect lower participation figures for General Mills and Health Maintenance. Indeed, this was the case for General Mills, but not for Health Maintenance. As previously noted, the Gallup results are difficult to predict or interpret because of the ambiguous wording of the question. Finally, the size of the age category presented (20-44) is sufficiently disparate from the other surveys to make its results both noncomparable and exceptionally difficult to interpret, especially since its youngest age bracket includes at least two age breakdowns within which significant decreases in number of exercise participants were demonstrated by the other surveys. In summary, the best estimate we can glean from these data is that roughly 50 percent of young adults participate in regular exercise.

For the older individuals, information for two age groups is presented. Data on persons 65 years of age and older come from three surveys: Perrier - 26 percent, General Mills - 39 percent, and HIS - 42 percent. These results are perplexing since Perrier would be expected to have the highest results and General Mills the lowest. This is not the case though. Consistent with earlier suggested explanations regarding age, the failure of Perrier to show different (higher) levels of activity by older individuals may be because such individuals are not as likely to be affected by the context of the Perrier study which may have elicited socially desirable responses from younger individuals. There is more convergence, however, when the age group of 50 years and older is examined. Health Maintenance showed 30 percent while the Gallup poll indicated 39 percent participation. When weighted averages are calculated for the 50 years and older groups from the other three surveys, the results become:

- Perrier - 35 percent
- General Mills - 33 percent
- HIS - 43 percent

Thus, it appears that four of the five surveys fell within the general ballpark of indicating that 30 to 39 percent of individuals aged 50 and over participate in regular exercise. Again, the lower overall regular exercise participation rates of General Mills and Health Maintenance are reflected in their statistics for this demographic variable.

Sex. All of the surveys that collected information on regular exercise disaggregated the responses by sex. The survey results are presented in Exhibit III-4. Four of the five surveys showed greater regular exercise participation by men than women. HIS data indicated that women get regular exercise as often as men. Based on the available information (i.e., Perrier and Gallup with relatively higher estimates and General Mills and Health Maintenance with lower results), there would appear to be convergence toward 45-50 percent participation in regular exercise by men and 40-45 percent for women. Further analysis did not provide any useful insights on factors that would account for the differences between surveys. However, the general conclusion that might be drawn is that men currently participate in regular exercise slightly more frequently than women. Other data indicated that men tend to participate in more vigorous forms of exercise (as described in an upcoming section on activity participation by demographic variables).

EXHIBIT III-4

PERCENT OF PERSONS INVOLVED IN REGULAR EXERCISE BY SEX FOR FIVE SURVEYS

Sex	Perrier	Health Maintenance	General Mills	HIS	Gallup
Male	58	41	37	49	50
Female	49	34	35	49	42

Race. Only Health Maintenance, Gallup and HIS provided data on regular exercise patterns by race, i.e., white and all other (see Exhibit III-5). Two surveys showed that white persons participate more frequently in regular exercise than do other races, but Gallup data showed the opposite. Further, the HIS and Gallup data demonstrated higher rates for both race categories. This result is expected since both these surveys had higher overall participation rates. The unexpected result is that Health Maintenance shows a large relative difference in participation by non-white persons whereas the HIS and Gallup surveys do not. Given the much larger sample size for the HIS survey and its convergence with the Gallup results, it is reasonable to believe that the relative difference in regular exercise participation is closer to 6 or 7 percent than to 15 percent (the Health Maintenance result).

EXHIBIT III-5

PERCENT OF PERSONS INVOLVED IN REGULAR EXERCISE BY RACE FOR THREE SURVEYS

Race	Health Maintenance	1975 HIS	Gallup
White	40	49	45
All other	25	43	52

Income. Five surveys provided information on participation as a function of income. Exhibit III-6 on the following page presents the survey results. The obvious conclusion is that the rate of regular participation in exercise increases as income

EXHIBIT III-6

PERCENT PERSONS INVOLVED IN REGULAR EXERCISE BY INCOME FOR FOUR SURVEYS

Perrier		Health Maintenance		General Mills		HIS-1975		Gallup	
Income Group	Percent Regular Exercisers	Income Group	Percent Regular Exercisers	Income* Group	Percent Regular Exercisers	Income Group	Percent Regular Exercisers	Income Group	Percent Regular Exercisers
Under $7,000	32	Under $7,000	24	Low	32	Less than $5,000	45	Less than $5,000	30
$7,000 to $14,999	51	$7,000 to $14,999	34	Medium	33	$5,000 to $9,999	46	$5,000 to $9,999	41
$15,000 to $24,999	63	$15,000 to $24,999	42	High	44	$10,000 to $14,999	50	$10,000 to $14,999	49
$24,000 and Over	69	$25,000 and Over	56			Over $15,000	53	$15,000 to $19,999	44
								$20,000 to $24,999	47
								$25,000 and Over	55
Ratio of Highest to lowest group	2.33		2.16		1.38		1.17		1.83

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* The three categories were defined as follows: Low: Family income under $10.000 and high school graduate or less. Middle: Family income of $10-19,000 and/or some college or college graduate. High: Family income of $20,000 and over and/or post-graduate degree.

increases. However, there is a great deal of difference in the extent of participation of the highest income group when compared to the lowest income group for each survey. As shown in the exhibit, the differences run from 2.33 times greater for Perrier to 1.17 times greater for HIS. Even though the absolute percentages reported by the two surveys that utilized identical income breakdowns (Perrier and Health Maintenance) differed by between 8 and 21 percent, fair agreement was achieved in the comparison of their lowest and highest income brackets. The Gallup results fell in the middle of the range of results shown by other surveys. This was true for the low, middle, and high income categories, as well as for the ratio of highest to lowest income groups. The comparability of the HIS data—because of the low income ceiling used—and the General Mills data—because of their combined use of income and education—is very limited. Hence, further conclusions beyond noting the positive correlation between income and participation would not be warranted by the data available.

Type of Community. Only two surveys provided disaggregation of regular exercise information by community type. Both the Perrier and General Mills data in Exhibit III-7 show that regular exercise participation is the greatest in suburban areas. Rates of regular exercise for both urban and small town/rural communities are somewhat less than the suburban rates, with the urban rates being slightly greater than those for small town and rural areas. The higher relative figures for Perrier are expected.

EXHIBIT III-7

PERCENT OF PERSONS INVOLVED IN REGULAR EXERCISE BY TYPE OF COMMUNITY FOR TWO SURVEYS

Community	Perrier	General Mills
Urban	47	34
Suburban	61	39
Small town/rural	51	35

Information was available from Gallup on towns/rural areas having less than 2,500 population up to cities having over a million residents. However, the Gallup data are not comparable to data from Perrier and General Mills because the latter two surveys utilize a standard metropolitan statistical area (SMSA) criterion to define the type of community whereas Gallup does not. The Gallup results indicated that towns/rural areas with less than 2,500 persons had the lowest rate of regular exercise participation at 40 percent, and that cities with a half to one million persons had the highest rate of 54 percent. Cities of other sizes had from 44 to 48 percent rates of regular exercise participation.

Region. Information on participation rates for regular exercise as a function of geographic region come from three surveys: Perrier, HIS and Gallup. Survey data are presented in Exhibit III-8 below. All three surveys showed that regular exercise is most prevalent in the West and least prevalent in the South. While the Perrier figures were expected to be higher, the results on this variable were mixed. The Perrier South and East figures were similar to the HIS and Gallup South and Northeast/East data, but data for the Perrier West and Midwest were considerably higher than HIS and Gallup results for the other comparable regions.

EXHIBIT III-8

PERCENT PERSONS INVOLVED IN REGULAR EXERCISE BY REGION FROM THREE SURVEYS

Region	Perrier	HIS	Gallup
East	50	—	48
Northeast	—	50	—
Midwest	59	—	45
North Central	—	50	—
South	42	42	41
West	68	56	51

Participation By Type of Activity

Far and away the greatest number of surveys collected data on participation in specific forms of exercise, sports, and recreation. In all, seven of the surveys asked about participation in specific activities. Five of those surveys obtained information in terms of percent participation by the general population. Exhibit III-9 portrays that information arranged by year of the survey. In examining the data, a couple of observations are germane:

- In all cases, the National Park Service (NPS) Outdoor Recreation Survey had the highest figure of all the studies. In many cases, its figures were much larger than any other.
- In many cases, the Perrier study had the lowest figure of all the surveys because of its focus on regular exercise. This held true for 29 of the 37 Perrier items.

Because the range of participation responses among the surveys is large, statements about the preferred participation figure for any specific activity could not be expected to be very reliable, even though the reasons for some of the differences are known. Instead, more useful information comes from rank ordering the participation levels within each survey and comparing the rank orders of each specific activity across surveys. By weighting responses according to their rank for activities that were

EXHIBIT III-9

PERCENT OF ANY PARTICIPATION IN SELECTED ACTIVITIES DURING THE PAST YEAR FROM FIVE SURVEYS

Exercise/Activity	1975 HIS	1977 NPS	1978* Perrier	1980 Gallup	1982 Nielsen
Walking	34[a]	68[b]	22	—	—
Swimming	24	63[c]	17	37	45
Calisthenics	14[a]	—	14	14	—
Bicycling	11[a]	47	13	27	32
Bowling	16	—	13	24	18
Running/jogging	5[a]	—	11	12[e]	15
Tennis	11	33	9	14	11
Basketball	8	—	7	18	11
Softball	9	—	7	16	12
Hiking	—	28[d]	7	21	—
Baseball	5	—	6	10	6
Golf	8	16	5	8	8
Volleyball	6	—	5	13	8
Football	5	—	4	11[f]	6
Frisbee	—	—	4	17	—
Table Tennis/Ping Pong	—	—	4	13	9
Weight lifting	3[a]	—	3	—	—
Snow skiing	—	7	3	6	9
Racquetball	—	—	2	6	5
Ice Skating	—	16	2	7	8
Badminton	—	—	2	6	—
Yoga	—	—	2	—	—
Sailing	—	11	2	4	5
Cross-Country skiing	—	2	2	—	—
Soccer	—	—	1	4	4
Archery	—	—	1	3	—
Mountain climbing	—	—	1	—	—
Gymnastics	2	—	1	—	—

EXHIBIT III-9 (continued)

	1973 HIS	1977 NPS	1978* Perrier	1982 Gallup	1980 Nielsen
Karate	—	—	1	—	—
Boxing	—	—	1	—	—
Handball	2	—	1	4	1
Squash	—	—	1	1	—
Track and field	1	—	1	—	—
Hockey	—	—	1	—	1
Wrestling	1	—	1	—	—
Judo	—	—	1	—	—
Fishing	—	53	—	20[g]	28
Camping	—	21	—	19	27
Sledding	—	21	—	7	—
Hunting	—	19	—	13	8
Canoe, Kayak, River Run	—	16	—	7	—
Water Skiing	—	16	3	7	8
Horseback riding	—	15	—	7	—
Snow mobile	—	8	—	3	—
Boating	—	—	—	12	19
Pool/Billiards	—	—	—	—	13
Roller skating	—	—	—	12	13
Motor biking	—	—	—	10	5
Paddle tennis	—	—	—	4	—
Target shooting	—	—	—	8	—
Back packing	—	—	—	5	—
Skeet, trap shooting	—	—	—	3	—
Skate boarding	—	—	—	2	—
Snorkeling	—	—	—	2	—
Distance, marathon running	—	—	—	2	—
Surfing	—	—	—	2	—
Scuba diving	—	—	—	1	—
Other	7	56	5	—	—

NOTES:

a. Participation figure for regular exercisers only; other data are for all respondents.

b. This category excludes walks to observe nature, birdwatching, wildlife photography, hiking and backpacking.

c. This category includes pool swimming and sunbathing, but excludes other swimming (46%).

d. This category includes backpacking.

e. This category does not include deep-sea fishing (5%) or surfcasting (2%).

f. This category is touch/flag football.

g. This percent is a subset of those persons who pursue daily activities to keep physically fit.

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* The Perrier study asked about "regular participation in activities at any time during the past year." Consequently, it is expected that the Perrier data would be lower than the other surveys which asked about any participation during the past year.

examined by at least three surveys, estimations of the relative popularity of each activity can be made. Using that approach for the five surveys in Exhibit III-9, we find that the activities with the highest overall levels of participation, in order of popularity, are walking, swimming, bicycling, bowling, calisthenics, hiking, softball, basketball, running/jogging, and tennis. For less frequently surveyed activities, fishing and camping also have relatively high levels of participation. Thus, convergence does occur for activities when relative ranks are used to compare the surveys.

Further, information on participation in selected activities in Exhibit III-10 comes from Wave I of the National Survey of Personal Health Practices and Consequences and from Roper. Because of their different response categories, they are not included in Exhibit III-9. However, their responses do provide strong support for the popularity of six of the ten most common activities that were identified from Exhibit III-9.

Activity Participation by Demographic Variables

In addition to examining the extent of any participation in specific exercises and sports, an analysis of the relationship of demographic variables to specific activity participation was undertaken. The demographic variables of age, sex, race, education, income, region and occupation were investigated. In general, the Gallup, Roper, and 1975 HIS surveys provided the most information on demographic variation in exercise and sports participation. However, one major difference among these three surveys needs to be noted. Both Roper and HIS present information for regular exercisers only, with the exception of HIS statistics on sex-specific participation. In contrast, Gallup provides participation rates for all respondents. The clearest effect is that the demographic variations provided by the Gallup data are more distinct than those from the other two surveys.

The Perrier survey and the National Survey of Personal Health Practices and Consequences both provided sex-specific in-

EXHIBIT III-10

ADDITIONAL INFORMATION ON PARTICIPATION IN SELECTED ACTIVITIES FROM TWO SURVEYS

Activity	National Survey of Personal Health Practices and Consequences—Wave I			Roper
		Men	Women	
Walking	Often -	37%	36%	Fairly Regularly - 33%
	Sometimes -	31	33	
	Rarely -	22	21	
	Never -	10	9	
Swimming*	Often -	27	25	Fairly Regularly - 14
	Sometimes -	30	23	
	Rarely -	24	21	
	Never -	19	31	
Jogging or Running**	Often -	16	9	Fairly Regularly - 13
	Sometimes -	16	13	
	Rarely -	19	17	
	Never -	49	61	
Calisthenics or Physical Exercise	Often -	27	28	Fairly Regularly
	Sometimes -	24	29	
	Rarely -	19	16	Alone - 30
	Never -	30	28	In Group - 7
Other Active Sports	Often -	32	17	Fairly Regularly - 22
	Sometimes -	25	24	
	Rarely -	15	17	
	Never -	28	42	
Bicycling	Often -	10	12	——
	Sometimes -	18	21	
	Rarely -	26	19	
	Never -	46	48	
Physically Active Hobby (e.g., dancing or gardening)	Often -	45	44	——
	Sometimes -	27	29	
	Rarely -	14	13	
	Never -	14	14	

EXHIBIT III-10 (continued)

Activity	National Survey of Personal Health Practices and Consequences—Wave I		Roper
	Men	Women	
Tennis	—	—	Fairly Regularly - 7
Golf	—	—	Fairly Regularly - 6
None	—	—	32

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* Swimming is specifically swimming in the summer for the National Survey of Personal Health Practices and Consequences.

** Persons responding that they often or sometimes jog were asked how many miles per week they usually jogged or ran. The responses were:

	Men	Women
Less than 5 miles	15	14
5 to 15 miles	12	6
More than 15 miles	5	1

formation only. The National Park Service and Nielsen studies did not provide demographic breakdowns for their data.

Age. Overall, Gallup, HIS, and Roper statistics support the general statement that participation in exercises and sports decreases with age. All three studies show sharp declines occurring in the 50-60 age range. However, they did find that participation in walking and golf remained consistent across age groups. Furthermore, Roper data indicate that exercise/calisthenic participation, either alone or in a group, decreases with age, but not as rapidly as for most other types of exercises and sports.

Sex. Participation in a number of activities was shown to be much more common for males than females. Exercises and sports for which male participation rates generally were found to be at least twice that of females included basketball, football, baseball, softball, golf, running/jogging, weight-lifting, handball, track and field, and wrestling. However, according to Perrier, female participation exceeded male participation by 50 percent for both walking and swimming. In addition, Roper data indicate that participation in group calisthenics is twice as great for women as for men. Overall, these data also indicate that men generally participate in more vigorous forms of exercise than do women.

Race. The Gallup survey showed the greatest differentials for activity participation by race. Its results indicate that whites participate twice as frequently as non-whites in swimming, hiking, frisbee, exercise at a gym, tennis, table tennis, and golf. In contrast, a similar magnitude of difference for whites was shown only for golf from the Roper study, and for swimming from the 1975 HIS survey. According to Gallup, Roper, and HIS, participation by non-whites was greater than by whites for jogging, although the margins differed in degree. Gallup had the greatest differential, with a participation ratio of 2 to 1 while HIS had the lowest with a 1.3 to 1 ratio.

Education. The Gallup survey showed marked differences between college and high school graduate participation in all exercises and sports as compared to grade school graduates. Fishing and hunting were the only two activities for which grade school graduate participation was even close to half of the participation rates of one of the other two categories. In many cases, college and high school graduates' participation was three to five times as great as that of grade school graduates. The most remarkable statistic is that 73 percent of the grade school graduates had not participated in any exercise in the past year. Comparable figures for high school and college graduates are 27 and 13 percent, respectively.

From the Roper survey, the percents of persons not participating in any exercise *regularly* were 48, 33 and 22 percent for grade school, high school and college graduates, respectively. However, information from HIS indicated that 64, 51, and 41 percent for persons with less than nine years of eduation, high school graduates, and persons with more than 13 years of education, respectively, do not get regular exercise. Given the amount of difference between these survey results, more information on this variable would be useful.

The only major difference found between college and high school graduates was that golf participation occurs twice as often for the college graduates. Roper and Gallup are consistent in this finding.

Income. In general, the specific activity participation rates from Gallup indicate that participation in any given activity increases with income. Moreover, participation rates for most activities drop off sharply for persons with incomes of less than $5,000. In particular, golf, motorboating, hunting, exercise at a gym, football, softball, bowling, and tennis have much lower participation rates for persons in this lowest income group.

The Roper and HIS data show the same overall trends but less strongly than the Gallup data. However, both the former surveys present information for regular exercisers, whereas the Gallup results are for all respondents. Furthermore, consistent participation across income levels is shown for walking and jogging from Roper, and for walking from HIS.

Region. Limited differences in regional participation were detected. The results of the Gallup study indicate that: 1) camping is much more common in the West than in any other area, 2) fishing and hunting are more frequent activities in areas other than the East, and 3) hiking and exercise at a gym occurs more often in regions outside the South.

Roper and HIS report somewhat different results. The former survey indicates slightly higher rates of participation for walking and jogging in the West and South and for exercise/calisthenics in the West. Results of the HIS survey indicate that jogging and calisthenics are participated in more frequently in the West and that the South has fewer persons who participate in bicycling and walking.

Occupation. The Gallup data reveal that clerical and sales persons are less likely to participate in most activities than either manual workers or professional/business individuals. This trend is especially pronounced for basketball, jogging, and football. On the other hand, statistics from Roper show a greater balance among the occupational categories that they utilized: executive/professional, white collar and blue collar. At most, their white collar workers showed a very small decrease in participation levels relative to the other occupational groups.

Time Spent on Exercise and Sports

Only the Perrier study asked about frequency of participation in various activities and the amount of time spent in each activity each time the activity was performed. Perrier defines activists as persons engaging in regular participation in calisthenics, running, brisk walking, basketball, bowling, swimming, bicycling, tennis or golf. Activists were asked about frequency and duration of participation in exercise and sports. Based on this activity participation data and the respondents' height and weight, an estimate of caloric expenditure in exercise and sports was calculated. Using the number of calories expended in physical activity, respondents were divided into high, moderate and low activity groups. On average, the high active respondents burned a minimum of approximately 1,500 calories per week in exercise and sports activity. The results of the Perrier analysis were as follows:

- High active persons comprise 15 percent of the total population and spend an average of 306 minutes per week on exercise and sports
- Moderate active persons comprise 16 percent of the total public and spend an average of 204 minutes per week on exercise and sports
- Low active individuals make up 28 percent of the population and spend an average of 150 minutes per week on exercise and sports.

The interesting aspect of the Perrier results is that the designated low active persons spend an average of two and a half hours per week in exercise or sports; this is not an insignificant amount. High actives spend twice as much time as the low actives in exercise and sports. Further information from Perrier indicated that high active individuals have basically the same amount of leisure time as other active and non-active persons, and that they have a more positive psychological outlook.

When Did An Individual Start to Exercise Regularly?

Health Maintenance addressed the question of when an individual began to exercise regularly. Exhibit III-11 presents the results and shows that 38 percent of the adult regular exercisers began such activity within the last year and, in all, 60 percent have begun such activity in the past two years. This might represent a growing trend for more involvement in exercise by the American public. However, what is not known is the rate

EXHIBIT III-11

PERIOD OF TIME WHEN REGULAR EXERCISE WAS STARTED FROM THE HEALTH MAINTENANCE SURVEY

	Percent
Within the last year	38%
1 - 2 years ago	22%
3 - 5 years ago	21%
More than five years ago	19%

at which regular exercisers are discontinuing physical activity. Without such information, the net increase in regular exercise participation cannot be known.

Single Exercise Participated in Most Regularly

Only the Perrier study provided information about the single exercise or sports activity that is pursued most often. Exhibit III-12 portrays the data for 12 categories of activities with breakdowns for the three groups of "active" exercisers. The results show that walking is the dominant form of regular exercise and that bowling is the second most common.

It is interesting to note that calisthenics, running/jogging, and basketball are preferred activities for the high active groups. The moderate active individuals overwhelmingly choose walking. Low active persons prefer bowling twice as frequently as walking or swimming.

New Activity Starts

Two surveys asked about new participation in exercise and sports activities. The Perrier study presented information on major activities having the largest number of new participants in the last two years. The National Park Service survey inquired whether the respondent was "just starting" a specific activity. Exhibit III-13 below shows the Perrier data, and the subsequent

EXHIBIT III-12

SINGLE EXERCISE PARTICIPATED IN MOST REGULARLY BASED ON THE PERRIER STUDY (in percents)

	Total Active	High Active	Moderate Active	Low Active	Gap Between High/Low Active
Walking	20	11	40	14	-3
Bowling	13	5	5	25	-20
Calisthenics	8	15	9	5	+10
Swimming	7	5	4	11	-6
Running/jogging	6	13	8	1	+12
Bicycling	6	5	6	7	-2
Basketball	5	10	6	4	+6
Tennis	4	4	3	5	-1
Golf	3	2	2	5	-3
Hiking	2	1	1	3	-2
Baseball	2	2	1	3	-1
Other	22	28	14	17	+11

EXHIBIT III-13

PERCENT OF PERSONS WHO ARE NEW PARTICIPANTS FOR SELECTED ACTIVITIES BASED ON THE PERRIER STUDY

	TOTAL		MALES		FEMALES	
	Number Participating (Millions)	Percentage of New Participants	Number Participating (Millions)	Percentage of New Participants	Number Participating (Millions)	Percentag New Parti pants
Walking	34.1	37	12.6	30	22.7	41
Swimming	26.4	41	11.9	35	16.2	45
Calisthenics	21.7	54	8.1	51	13.8	57
Bicycling	20.2	42	8.2	42	13.0	43
Bowling	20.2	46	11.2	37	9.7	57
Running	17.1	63	10.4	53	6.5	73
Tennis	14.0	49	7.4	48	6.5	51
Basketball	10.9	59	9.6	57	1.6	67
Softball	10.9	52	8.2	52	3.2	52
Hiking	10.9	45	5.2	41	5.7	49
Baseball	9.3	56	6.7	53	1.6	67
Golf	7.8	45	5.9	40	2.4	58

NOTE: This table does not tell how fast a sport is growing, but how many new participants joined between 1976 and 1978.

Exhibit (III-14) provides the National Park Service information. Because the time frame of the former survey is for two years while the latter's is presumably for a shorter period of time, it is not surprising that there is a great deal of difference between the two. In addition, the figures shown in the two exhibits were calculated on different bases. The Perrier figures represent percentages of those initiating an activity in the past two years; NPS data represent percentages of all respondents. It should suffice to say that the two sets of information are not comparable.

Use of Leisure Time

The General Mills survey provided information about the use of leisure time for two subgroups. Exhibit III-15 shows what family members like to do most with their leisure time. Exhibit III-16 provides the same information for parents.

A review of Exhibit III-15 reveals that persons who exercise regularly prefer to get exercise a little more than to sit and relax and twice as much as to go to a movie, bar, or restaurant. In contrast, the "sedentaries" seem to prefer to do almost anything but exercise.

An examination of Exhibit III-16 on how parents prefer to spend their leisure time, indicates that fathers, parents with younger children, and parents with fewer children prefer to get more exercise that other categories of parents. Parents with three or more children are the group that least want to use their leisure time to get exercise.

However, other General Mills data reveal that regular exercisers include 48 percent of single parents, 33 percent of parents of teenagers, and 32 percent of parents of children under 6 years of age. These statistics conflict with data shown in Exhibit III-16, but may be indicative of the differences between what individuals want to do and what they actually do.

EXHIBIT III-14

PERCENT OF PERSONS WHO ARE JUST STARTING SELECTED ACTIVITIES ACCORDING TO THE NATIONAL PARK SERVICE SURVEY

Activity	Percent
Tennis	4
Jogging or walking other than to observe nature, birdwatch, wildlife photography, hike and backpack	2
Water ski	2
Pool swim or sunbathe	1
Walking to observe nature, birdwatch or wildlife photography	1
Bicycle	1
Hike or backpack	1
Golf	1
Downhill ski	1
Cross-country ski	1
Canoe, kayak, river run	1
Horseback riding	1
Sail	1

EXHIBIT III-15

FAMILY MEMBER PREFERENCE FOR USE OF LEISURE TIME FROM THE GENERAL MILLS SURVEY

	Total (Percent)	Regular Exercisers (Percent)	Sedentaries (Percent)
Sit around and relax	51	38	57
Get some physical exercise	24	41	15
Go out to a movie, bar or restaurant	25	21	28

NOTE: Repercentaged without not sures/no answers.

EXHIBIT III-16

PARENT PREFERENCE FOR USE OF LEISURE TIME FROM THE GENERAL MILLS STUDY

	Sit Around and Relax (Percent)	Get Some Physical Exercise (Percent)	Go Out to a Movie, Bar or Restaurant (Percent)
Total parents	47	26	27
Mothers	45	23	32
Fathers	50	32	18
Single parents	44	25	31
Parents with child(ren) under 6 years	35	32	33
Parents with teenage children	54	24	22
Parents with one or two children	42	31	27
Parents with three or more children	57	17	26

NOTE: Repercentaged without not sures/no answers.

Consultation with Physician Regarding Exercise

The General Mills survey provided information about the percent of persons who never talked to doctors about how much exercise they should get. Overall, 32 percent of the respondents indicated that they had not talked with physicians about the appropriate level of exercise. The General Mills study also broke the population down into the Concerned, those who are health concious (60 percent), and the Complacent, those who are not (40 percent). Responses for the former group revealed that 28 percent had not discussed exercise needs with a physician. The corresponding figure for the Complacent was 38 percent.

Two aspects of the survey results are of interest. First, it is surprising that 28 percent of the health conscious group had not talked to a physician about an adequate level of exercise. This may suggest that, even in the minds of persons who are generally pursuing preventive health measures, exercise has not been firmly associated with better health status. Some further support for this suggestion can be seen in Exhibit III-25 on factors that are most likely to increase chances of involvement in athletic activity. These results indicate that a physician's recommendation ranks highest on a list of such facilitative factors.

Second, it is also surprising that almost as many "Complacent" as "Concerned" persons have talked with a physician about an appropriate level of exercise (62 percent versus 72 percent). This brings up the question of who is the initiator of discussions on exercise: the physician or the individual? If physicians are the most frequent initiator of such discussions, then the results may not be as surprising as they initially appear.

REASONS FOR PHYSICAL ACTIVITY BEHAVIOR

Reasons for Exercise

Health Maintenance and Roper both asked about reasons for involvement in exercise. However, the former study asked about reasons for becoming involved in exercise, while the latter study inquired about reasons for present involvement in exercise. This difference in focus prevents a direct comparison of their results.

The Health Maintenance study prompted its respondents with specific reasons. Exhibit III-17 presents the results. Overall, the responses indicate that individuals become involved more for fitness and health reasons than for enjoyment or social reasons. In fact, physical fitness and health-related responses account for 84.7 percent of total responses versus 11.6 percent for recreation/enjoyment reasons and 2.5 percent for social reasons.

In asking about reasons for current involvement in exercise, Roper inquired about reasons in a more restricted way than did Health Maintenance. The specific question asked by Roper was as follows: Do you do these things (engage in regular physical activity) because you enjoy them or more because you think they help to keep you physically fit? The result was that almost all of the Roper responses were grouped into one of the three categories: for enjoyment reasons, for fitness reasons, or for both enjoyment and fitness reasons. The results are as follows:

- More for enjoyment reasons - 29%
- More for fitness reasons - 19%
- Both about equally - 16%
- Don't know - 1%

The remainder of the respondents were not asked the question because they had not indicated participation in regular exercise. In addition, results from another Roper question

EXHIBIT III-17

REASONS FOR BECOMING INVOLVED IN REGULAR EXERCISE FROM THE HEALTH MAINTENANCE SURVEY

Reasons	Percent*
To feel better in general	51
To stay healthy	45
To lose weight	41
For recreation, enjoyment	37
To strengthen the muscles	36
To become fit	33
To become more healthy	24
To strengthen the heart/lungs	24
Doctor recommended	17
To socialize, meet new friends	8
Other	4

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*Percentages total over 100% due to multiple responses.

indicate that four percent of the respondents engage in regular exercise because of a physician's recommendation.

A review of the two sets of data produces three distinct findings. First, it appears that, while physical fitness and health related reasons may be more responsible for initial involvement in regular exercise, enjoyment reasons predominate in continued involvement.

Second, both surveys indicated that physician recommendations have little influence on an individual's decision of whether or not to engage in regular exercise. As will be discussed more fully in a later section, this finding is not supported by Perrier data on factors that can affect exercise involvement.

Third, the Health Maintenance data indicate that social factors represent minor influences in exercise decisions. The upcoming discussion on benefits provides addtional support for this finding.

Physical, Psychological and Social Benefits of Exercise and Sports Participation

In contrast to the Health Maintenance and Roper surveys, which queried respondents about reasons for becoming involved in regular exercise, Perrier requested information about perceived benefits of participation. Although it is not possible to treat these two concepts identically, since reasons are presumably the precipitating factors in stimulating exercise while benefits are the outcomes that accrue from exercise, it is necessary to recognize the related nature of the two. After all, reasons are often the results of considering the potential benefits of engaging in some activity and, conversely, one is like to concentrate on derived benefits specifically related to one's initial rationale for starting something. With this caveat in mind, the Perrier results regarding the benefits of exercise are discussed below. Four separate aspects of benefits were examined:

- Physical benefits of exercise and sports participation
- Physical benefits of running
- Psychological benefits of exercise and sports
- Social benefits of participation in sports and exercise.

Exhibit III-18 portrays the Perrier results on the physical benefits of exercise and sports involvement. The major conclusion coming from that data is that greater levels of activity appear to be associated with consistently higher levels of physical benefits. The greatest differences between high and low activity levels occur for feeling physically fit (+36 percent), becoming stronger (+23 percent), and feeling healthier (+21 percent).

When the key physical benefits of running are focused upon, one finds that staying in shape is the leading benefit and that losing weight is least often cited. Exhibit III-19 presents the full set of data on this item.

The next table, Exhibit III-20, shows the psychological benefits reported as accruing from participation in sports and exercise. There are clearly a broad range of positive benefits which occur with greater physical activity. The benefits for which there is the greatest gap between high and low actives are feeling less tired than before and becoming more disciplined in general. The size of a list of major psychological benefits and the consistently higher percentages for the high active group attest to the strength of exercise in producing an improved psychological frame of mind.

Finally, Exhibit III-21 examines the major social benefits of exercise. Only two such benefits are identified: having a good time and meeting new friends. In contrast to the physical and psychological benefits, the social benefits grow greater as the level of activity decreases.

EXHIBIT III-18

MAJOR PHYSICAL BENEFITS FROM EXERCISE AND SPORTS BY LEVEL OF COMMITMENT TO PHYSICAL FITNESS FROM THE PERRIER STUDY

	Total Active (Percent)	High Active (Percent)	Low Active (Percent)	Gap Between High/Low Active (Percent)
Am healthier in general	65	74	53	+ 21
Have increased stamina	52	60	44	+ 16
Am physically fit	52	73	37	+ 36
Have become stronger	44	57	34	+ 23
Have improved coordination	43	53	42	+ 11
Lost weight	24	29	20	+ 9
Require less sleep	16	24	11	+ 13
Drink less than before	8	9	5	+ 4

EXHIBIT III- 19

KEY AND OTHER BENEFITS OF RUNNING
FROM THE PERRIER STUDY

	Total Active (Percent)	High Active (Percent)	Low Active (Percent)	Gap Between High and Low (Percent)
KEYS TO INTENSIVE RUNNING				
Stay in shape	21	24	5	+ 19
Get good stamina, wind	17	18	7	+ 11
Tones my legs, limbs, muscles	15	16	5	+ 11
Good, solid exercise	13	13	-	+ 13
NOT KEYS				
Physical benefits in general	19	16	21	- 5
Fun, relieves monotony	17	19	21	- 2
Compete with myself	14	12	14	- 2
Helps my heart rate, circulation	14	12	15	- 3
Relaxing, gives me time to think	12	11	19	- 8
Lose weight	12	11	27	- 16

EXHIBIT III-20

MAJOR PSYCHOLOGICAL BENEFITS FROM EXERCISE AND SPORTS PARTICIPATION BY LEVEL OF COMMITMENT FROM THE PERRIER STUDY

	Total Active (Percent)	High Active (Percent)	Low Active (Percent)	Gap Between High/Low Active (Percent)
Feel better in general	80	83	77	+ 6
Psychological effects in general	57	61	53	+ 8
Am less tense than before	53	62	47	+ 15
Sleep better	52	54	46	+ 8
Am more relaxed than before	50	58	42	+ 16
Feel less tired than before	45	55	36	+ 19
Will let me live longer	43	50	34	+ 16
Look better	42	48	37	+ 11
Concentration has improved	36	44	34	+ 10
Have become more disciplined in general	33	46	27	+ 19
Have a better self image than before	33	38	28	+ 10
Have gained confidence	33	39	28	+ 11
Have improved outlook on life	32	35	27	+ 8
Am better able to cope with life's pressures	29	34	25	+ 9
Productivity has improved	28	39	23	+ 16
Am more assertive than before	27	31	24	+ 7
Think more creatively	25	28	21	+ 7
Smoke less than before	11	13	8	+ 5
Able to enjoy a better sex life	18	28	13	+ 15

EXHIBIT III-21

MAJOR SOCIAL BENEFITS FROM EXERCISE AND SPORTS PARTICIPATION BY LEVEL OF COMMITMENT FROM THE PERRIER STUDY

(in percents)

	Total Active	High Active	Low Active	Gap Between High/Low Active
Have a good time	76	77	83	- 6
Have met new friends	42	41	45	- 4

In conclusion, individuals who exercise perceive that a great number of physical and psychological benefits accrue to them. Further, these benefits are perceived to be greater for those persons who exercise more. In contrast, the Perrier results indicate that few social benefits are perceived to be associated with exercise and sports participation.

Reasons for Not Getting Exercise

The Health Maintenance, Perrier and General Mills surveys all asked about reasons why a person felt he/she was not getting enough exercise. All three of these surveys asked this question only of persons who had earlier stated that they did not believe they were getting sufficient exercise. This subgroup is composed of persons who exercise regularly and of those who do not.

Exhibit III-22 presents the results. While there is limited convergence among the survey results, it is clear that lack of time is the greatest barrier to exercise. Other reasons that rank high in the three surveys are:

- Takes too much discipline/lack of motivation
- Not interested/don't like
- Poor health.

Other reasons accounting for 10 percent or more of the responses from any of the surveys are family obligations, weather, and lack of facilities/partners. Probably the major point to be made here is that many of the reasons for not getting enough exercise, especially the more significant ones, are self-imposed. Exhibit III-23 shows a Perrier follow-up question to the item concerning reasons for not getting enough exercise. It illustrates even more clearly the extent that individuals choose not to get more exercise than they do. Five of the top seven responses are matters of self-determination.

EXHIBIT III-22

REASONS FOR NOT GETTING ENOUGH EXERCISE FROM THREE SURVEYS (in Percent)

Reasons	Health Maintenance	Perrier*	General Mills
Don't have enough time	42	47/34	43
Takes too much discipline/lack of motivation	24	7/5	16
Poor health	11	19/14	9
Family obligations	—	19/14	—
Weather	2	15/11	—
Not interested/don't like to exercise	10	11/8	12
Lack of facilities/partners	3	14/10	—
Don't have enough energy	—	—/—	8
It's too inconvenient	5	—/—	—
Age	—	3/2	—
Other	2	2/1	12

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* First figures are reported data; second figures are repercentaged to 100% to be consistent with the other two surveys. It is believed that the Health Maintenance results have been treated in a similar manner. The General Mills survey asked for a single reason and thus should not have needed to repercentage its figures.

EXHIBIT III-23

FACTORS THAT BEST EXPLAIN WHY NOT GETTING ENOUGH EXERCISE FROM THE PERRIER STUDY

Reasons	Percent
I don't have enough time	54
Exercise is something I procrastinate about	32
It's too inconvenient	22
I avoid exercise for health reasons	16
I'm just not interested	14
There are no facilities available	13
It's not that important to me	10
It's too expensive	9
Facilities around here aren't that good	8
I just don't enjoy exercise	6
Exercise isn't important at my age	4
Bad weather	4
I smoke and that makes it hard to exercise	2
Other	5
Not sure	1

In Exhibit III-24, age-specific results from the Health Maintenance survey regarding reasons given for failure to exercise are presented. This information permits three relevant observations. First, lack of time for exercise is much less often cited as a factor for persons age 50 and over. Second, the ascription to poor health as a reason increases with age and is a particular barrier for individuals age 50 and over. Third, lack of interest in exercise gradually increases with age. This is consistent with Perrier data which indicate that older persons generally feel less of a need for exercise.

EXHIBIT III-24

REASONS FOR NOT GETTING ENOUGH EXERCISE FROM THE HEALTH MAINTENANCE SURVEY (in Percents)

		Age Groups		
Reasons	Total	18 - 29	30 - 49	50+
Don't have enough time	42	51	50	19
It takes too much discipline	24	24	22	28
Poor health	11	3	8	24
Not interested	10	7	10	15
It's too inconvenient	5	5	6	2
No facilities in area	3	4	2	4
Bad weather	2	2	*	3
Other	2	3	1	2
Not sure	*	—	—	2

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* Less than 0.5 percent.

Factors That Are Most Likely to Increase Involvement in Athletic Activities

The Perrier study is the only survey that asked about factors likely to increase an individual's participation in athletic activity. The results are presented in Exhibit III-25 for the total public, non-active persons, and active persons. The two factors that were perceived as being most likely to increase exercise and sports participation for the total public were physician's recommendation and nicer weather.

However, the difference between the active and non-active groups is fairly dramatic. While both groups rank a physician's recommendation very high, other responses show that in general, active persons say they are twice as likely to increase their athletic participation given the presence of any specific factor, e.g., nicer weather, a four-day work week, greater availability of facilities, etc. There are a few exceptions: influence of your family, participation by friends, and more information on the benefits of physical fitness.

One other result deserves to be emphasized. The second most common response for non-active persons is that no factor would increase their involvement in athletic activities. Almost 25 percent of the non-active persons, or roughly 10 percent of the total population, appear to be intransigent about their non-exercise behavior. The only factor that more often is cited as likely to change their behavior is a doctor's recommendation.

ATTITUDES AND PERCEPTIONS REGARDING PHYSICAL ACTIVITIES

In reviewing various surveys, several questions were found concerning people's attitudes about their own levels of fitness and physical activity, the importance of exercise in general and various forms of exercise, and the amount of exercise needed to keep fit.

EXHIBIT III-25

FACTORS THAT ARE MOST LIKELY TO INCREASE CHANCES OF INVOLVEMENT IN ATHLETIC ACTIVITY FROM THE PERRIER STUDY

Factors	Total Public (Percent)	Non-Active (Percent)	Active (Percent)
A physician's recommendation	36	43	32
Nicer weather	27	18	23
A four-day work week	17	11	22
Greater availability of facilities	17	10	22
More flexible scheduling of your work day	15	9	19
Influence of your family	13	13	13
If your friends began doing it	12	10	13
Less expensive facilities	10	6	13
If a fitness program were begun at work	8	5	10
Influence of friends who are fitness enthusiasts	7	5	8
More information on benefits of physical fitness	3	4	2
Other	2	2	3
None	13	23	6
Not sure	2	3	1

A logical starting point in the broad conceptual area covered by attitudes and perceptions is to look at people's satisfaction with their own physical condition. Only the National Survey of Personal Health Practices and Consequences dealt with this issue.

The survey results indicate that most of the population covered by the survey (men and women aged 20-64) are at least somewhat satisfied with their physical condition, although only a minority (31 percent of men and 27 percent of women) are "very satisfied." When broken down by age categories, the smallest proportions of the population reporting dissatisfaction are in the oldest group (ages 50-64), apparently reflecting lower expectations for physical condition with the onset of the later period of life. Across all ages, 17 percent of men and 20 percent of women express dissatisfaction with their physical condition.

The picture changes dramatically when people are asked about satisfaction with their exercise behavior. Three surveys--Perrier, Health Maintenance, and the National Survey of Personal Health Practices and Consequences--addressed this question. Exhibit III-26 presents these results.

EXHIBIT III-26

PERCENT OF PERSONS WHO SAY THEY GET ENOUGH EXERCISE OR NOT FROM THREE SURVEYS

	Perrier	National Survey of Personal Health Practices and Consequences	Health Maintenance
Enough	48	46 - men 37 - women	58
Not Enough	50	53 - men 62 - women	41
Not Sure	2	--	1

These findings are a bit puzzling in that Perrier, with 48 percent believing they get enough exercise, identified a relatively high percentage of its survey population as getting regular exercise at some point during the year. Health Maintenance, on the other hand, found a relatively low percentage of regular exercisers (37 percent), but showed the highest percent of those believing they get enough exercise.

In both instances, age breakouts were presented. These tabulations showed that older people more than others feel they get enough exercise, even though they tend to exercise less than others. It may be the case that the elderly do not believe that exercise will be beneficial for them. Thus, they are more likely to believe that whatever level of exercise they attain is enough.

It is also interesting that a large proportion of those most active in physical exercise think they should do more. Health Maintenance reported 32 percent of regular exercisers feeling a need for more. Perrier reported 51 percent of those it classified as active believing they do not get enough exercise. Thus, the data seem to show that many of those who might be considered to need more activity (older, relatively inactive persons) tend to perceive less of a need for it, while those on the surface who need it least are most interested in getting more. It appears that those who participate even a little bit seem to have accepted exercise as beneficial, while non-participants tend to be more impervious to the fitness message.

The manner in which the questions were asked on the three surveys was fairly consistent and straightforward and would not seem to be an underlying factor in differences in the data. The more basic issue of how exercise was defined may be responsible for some of the differences, however.

A related item is how people perceive their exercise behavior relative to others of the same sex and age range. Three surveys dealt with this issue. The three are Health Practices and Consequences, and both the 1975 and 1977 Health Interview Survey supplements. The results summarized in Exhibit III-27 below indicate that most people believe they are the same or better than their counterparts when it comes to exercising. Particularly telling is the small percentage who believe they are less active. The differences between HIS and the National Survey of Personal Health Practices and Consequences can be accounted for largely on the grounds that HIS offered respondents the opportunity to rate themselves as about the same—for some perhaps a comfortable alternative to a rating of "less active." The National Survey of Personal Health Practices and Consequences tried to force a distinction between being more or less active. It eased the choice by use of a four point scale (no mid-point) which allowed respondents to rate themselves as much more active, somewhat more active, somewhat less active, or much less active than others of their age. But even at that, only about a quarter of the survey audience considered themselves less active.

EXHIBIT III-27

SELF-PERCEIVED LEVEL OF ACTIVITY COMPARED WITH ONE'S PEERS FROM THREE SURVEYS

	Health Practices and Consequences	HIS - 1975	HIS - 1977
Less Active	20% - men 31% - women	16%	12%
Same	N/A	46%	51%
More Active	75% - men 64% - women	27%	37%
Don't Know/Unknown	N/A	11%	N/A

In light of the earlier discussion of the relatively large proportion of persons indicating that they believe they should get more exercise, it would appear that the tendency to perceive one's self as like most other people is a strong inhibitor of changing behavior. That is, believing that one should do more may not be enough as long as one believes that he or she is no worse off than his or her age peers. The 1975 HIS provides further insight on this issue by distinguishing between those reporting regular exercise and those indicating no regular exercise. Even in the latter group which comprised more than half the total population in this survey, only a small minority of the respondents rated themselves as less active than their peers.

In a review of survey findings on levels of participation in various exercises and perceptions of fitness behavior in terms of adequacy and comparison with others, it is appropriate to move to a consideration of what people think they should do to be fit. Perrier is the only survey which addressed this issue. Three pertinent questions were asked concerning:

- Perception of most important type of exercise
- Perception of types and amounts of exercise necessary to keep fit
- Perception of whether involvement by older persons in sports and exercise is a good idea.

With respect to the first item, there was an overwhelming response that "exercises to strengthen the heart and improve blood circulation like running or swimming" are most important. This opinion was voiced by those in Perrier's active and non-active groups and across all ages. The only factor that might have influenced the results upward was that the response category about aerobic exercises was listed first. Three-quarters of the total population gave this response. That figure is comprised of 69 percent of the non-actives and 80 percent of the actives.

When asked if participation in various activities three times a week for an hour would be enough to maintain physical fitness, respondents displayed a fairly good knowledge of the relative contributions of various activities. There seems to be some room for improvement, though, as evidenced in the sizable minorities of people who feel that three sessions of bowling or golf are sufficient.

When broken down by age category, the results indicate that older people are the least well informed about fitness. Specifically, the two oldest age categories (age 50-64 and 65 plus) showed the highest proportions believing that three sessions of bowling or golf are sufficient. Misconceptions about the physical fitness effects of baseball were distributed fairly evenly across ages. These results seem to tie into earlier observations regarding the physical activities of older people, namely that only a moderate amount of exercise is appropriate with advancing age.

The third item listed above is indicative of the consideration underlying older people's relatively low levels and low quality of exercise participation. As shown in Exhibit III-28. persons of all ages feel that older persons should be involved in sports and athletic activities. As expected, the lowest percentages are obtained for the two oldest groups, even though the question specified a doctor's permission as a pre-condition for participation.

All of these data suggest that older persons understand in the abstract that exercise, even aerobic exercise, is beneficial. But, when it comes to their own activities, they seem more reticent, perhaps from fear of doing more than would be beneficial. This theme comes from the tendency to participate in walking, bowling and golf and to think that these activities can produce fitness. From the available data, we can only speculate about how many of the 75-80 percent of older persons who indicate that sports participation is appropriate for them are referring to these non-vigorous pursuits.

CHANGES IN PHYSICAL ACTIVITY PATTERNS

Following the examination of individual physical activity behavior and related perceptions, it seems appropriate to consider the extent to which persons have changed their level of participation recently or plan to change it. Earlier Perrier information on perceptions about exercise suggest that increases in exercise participation might be occurring. These changes can be examined through the responses of individuals or by tracing

EXHIBIT III-28

PERCENT OF PERSONS RESPONDING TO DESIRABILITY OF INVOLVEMENT OF OLDER PEOPLE IN SPORTS AND ATHLETIC ACTIVITIES FROM THE PERRIER STUDY

Responses	Total Public	Age Groups 18-24 Years	25-34 Years	35-49 Years	50-64 Years	65 And Over
Good idea	84	86	90	89	80	73
Bad idea	3	4	1	2	7	4
Depends (vol.)	11	9	8	8	11	19
Not sure	2	1	1	1	2	4

self-reported participation levels in various activities over time.

Change in Individual Behavior

Beginning with reported changes, there were two surveys which asked for a comparison of current exercise behavior with the recent past. General Mills asked about changes in the past year, while Health Practices and Consequences asked about changes over the preceding two years. The results of the two surveys on this issue are shown below in Exhibit III-29, and reveal almost identical results. Most people did not change their level of activity in the preceding year or two. Those who did change split almost evenly into the more active and less active categories. It might be expected that some of those becoming less active did so for reasons of poor health or advancing age, although the available data are not broken down to test this explicitly. Recall, however, that the previous presentation of information showed that some persons do not exercise because of health problems.

Health Maintenance was the only survey that asked nonparticipants about the likelihood of participating in regular exercise in the future. The results, shown in Exhibit III-30, indicate interesting differences among subgroups. Those rating themselves as very likely to become active in regular exercise tend to be young and are more likely to be male. Also, there seems to be a positive association between income level and the likelihood of becoming more active.

Two surveys asked a related question concerning the likelihood of an individual taking up a new form of exercise in the future: Perrier and the 1977 Outdoor Recreation Survey. These results are shown together in Exhibit III-31. Both of these surveys indicated the proportions of the population having plans for new activity by age and sex.

These results appear generally convergent if one combines Perrier's "very likely" and "somewhat likely" response categor-

EXHIBIT III-29

CHANGES IN CURRENT EXERCISE BEHAVIOR FROM PAST FROM TWO SURVEYS

Response	General Mills*	Health Practices and Consequences**
More active now	24%	21% - men 26% - women
Same as before	55%	58% - men 54% - women
Less active now	21%	21% - men 20% - women

* This survey asks about changes in behavior in the past year.

** This survey asks about changes in behavior over the past two years.

EXHIBIT III-30

PERCENT OF INACTIVE PERSONS INDICATING PLANS TO BEGIN REGULAR EXERCISE FROM THE HEALTH MAINTENANCE SURVEY

	Very Likely	Somewhat Likely	Hardly Likely At All	Not Sure
TOTAL PUBLIC	16	26	56	2
AGE				
18-29 years	32	35	30	2
30-49 years	17	36	46	2
50 and over	7	11	79	2
INCOME				
Under $7,000	12	17	68	3
$7,000-$14,999	19	27	53	1
$15,000-$24,999	19	29	50	2
$25,000 and over	16	40	44	-
SEX				
Male	21	25	52	3
Female	13	27	59	2

EXHIBIT III-31

PERCENT OF PERSONS INDICATING PLANS TO TAKE UP A NEW FORM OF EXERCISE FROM TWO SURVEYS

	Perrier			NPS Outdoor Recreation Survey
	Very or Somewhat Likely	Somewhat OR Very Unlikely	Not Sure	Would like to start in next year or two
TOTAL	36	59	5	33
AGE GROUPS				
12-17	N/A	N/A	N/A	49
18-24	59	34	7	50
25-34	61	55	4	46
35-49	40	55	5	31 (35-44)
50-64	22	73	4	21 (45-54)
				21 (55-64)
65+	6	94	1	8
SEX				
Male	36	60	5	34
Female	38	58	4	33

ies. The Outdoor Recreation Survey asked a fairly broad, open-ended question as compared to Perrier. It was phrased in terms of the next year or two and thus would appear to be about as inclusive as Perrier with regard to the probability of picking up positive responses from those who had only general intentions of increasing their activity levels. The very small differences between the two surveys on this point might however be less insignificant than they appear at first. This is because the Outdoor Recreation's inclusion of respondents aged 12-17 with a relatively high rate (49 percent) of intended activity probably increased its overall estimates. On the other hand, it also may be the case that Outdoor Recreation's estimates are a bit lower because of its focus on outdoor activities. Because it is not possible to separate out the opposing influence of these two explanations, it seems reasonable to state that they are likely to balance each other out, leading to the conclusion that the data probably do not indicate convergence.

By way of interpretation, these results would seem to support other findings about individual awareness of fitness benefits and the need for higher levels of activity. Further, the findings presented earlier about the relatively small proportions of people who increased their activities in the last year or so suggest that awareness and perception of need are different from actual behavior. The question then becomes how many of those expressing positive intentions will actually take action? Recall that many of those feeling a need for more exercise are already active. Therefore, the real likelihood of increased activity by the inactive remainder would seem open to serious question.

Perrier data were examined to try to shed some light on the distinction between those already active who intend to do more and those who are inactive; this survey showed responses of inactive persons separately from "actives." Exhibit III-32 presents the responses of inactive persons regarding intentions to become more active. The general picture is one in which most inactive people are likely to remain inactive. Of course, no judgment can be made as to whether the 11 percent planning to become active represents good news or not.

EXHIBIT III-32

PERCENT OF INACTIVE PERSONS PLANNING TO BECOME MORE ACTIVE FROM THE PERRIER SURVEY

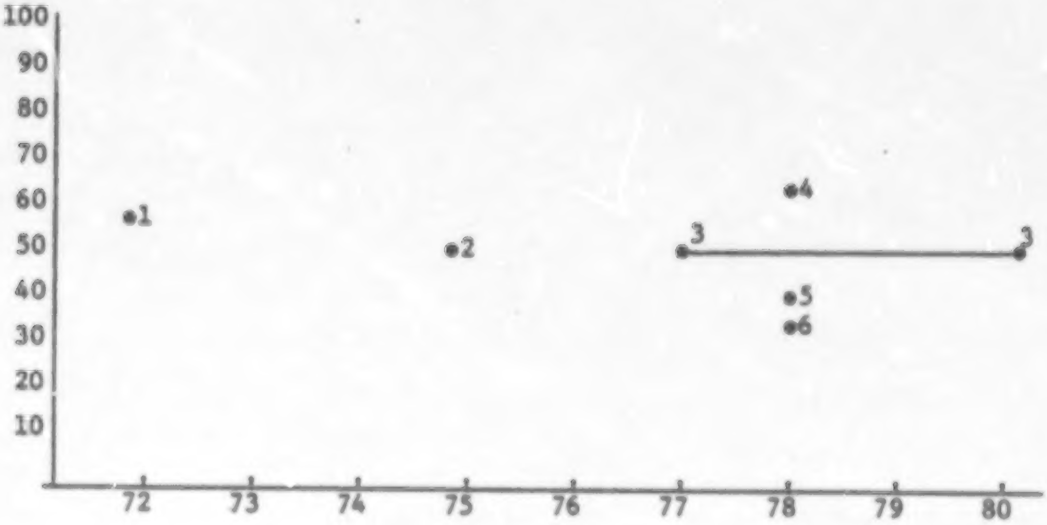
Very likely	11
Somewhat likely	11
Somewhat or very unlikely	75
Not sure	4

Overall Trends in Participation

In considering the question of how many people exercise, it is useful to try to identify from the various surveys the extent to which changes have taken place in connection with the well-publicized "fitness boom." In reviewing the results of the various surveys over the last ten years, we can look first for changes in exercise participation in general, i.e., without reference to specific activities. Several of the surveys proved inapplicable for this question, because they did not ask directly about participation. Some surveys, such as Roper, asked people to classify themselves as active or inactive, or asked respondents if they get much exercise when they engage in recreational activity, without considering the questions of frequency and duration. Others such as Nielsen, Outdoor Recreation, and the National Survey of Personal Health Practices and Consequences only inquired about specific activities, without considering the calculation of an unduplicated count of those who are physically active in one or more ways. For those surveys that did deal with the overall question of participation, the inquiries were phrased differently from one survey to another with uncertain effects on the results. Bearing these caveats in mind, Exhibit III-33 is presented to compare the results of several surveys dating from 1972 to 1980.

EXHIBIT III-33

TRENDS IN OVERALL PARTICIPATION RATES FROM SIX SURVEYS



1	National Adult Fitness	Participation in any of a list of activities
2	Health Interview Survey (1975 supplement)	One or more types of regular exercise
3	Gallup Poll 1977 and 1980	Exercise on a regular basis
4	Perrier	Regular participation in at least one of a list of activities at any time during the past year
5	Health Maintenance	Current regular exercise
6	General Mills	Planned exercise several times a week

This exhibit does not indicate any dramatic changes in the proportion of the population engaged in exercise over the 1972 to 1980 period. In fact, the National Adult Physical Fitness Survey (the earliest of the surveys examined) recorded the highest estimate of participation. It should be noted, however, that that survey asked respondents if they participated in any of six exercise activities, but the overall participation rate covered a wide range of frequency, duration and intensity. Also, walking, which might be especially prone to over-reporting or over-estimation on all of those dimensions, was by far the most prevalent activity—40 percent of the population reported it, but less than 25 percent reported walking daily. In general, estimates were higher where the questions allowed respondents to cite participation during a long period of time, without reference to or definition of regularity, or where there was inclusion of activities that might not have been sustained or vigorous. Perrier was the other survey with estimates of participation of 50 percent or more. Perrier presented a list of activities, an aided recall technique which very likely contributed to slightly higher estimates. Perrier also allowed citation of activities participated in regularly at any time in the past year. Finally, Perrier's emphasis on fitness throughout the survey very likely created a perceived demand to answer questions in the socially desirable fashion.

Perrier did, however, attempt to overcome possibly spurious reports of exercise participation by creating categories of activity (high, moderate, and low) based on frequency, duration, and caloric expenditure. Removing the "low active" category from consideration drops its estimates to 30 percent, lower than all the other surveys.

The results from the surveys indicate no real trend in exercise participation over the past several years. However, they suggest some interesting implications given earlier information from the Health Maintenance survey that 40 percent of the regular exercisers began such activity in the last year and 60 percent started in the last two years. An overall constant rate of participation suggests that the number of persons becoming involved in regular exercise is similar to the number of individuals who are discontinuing exercise. This suggests that many adults may have intermittent involvement in regular exercise, i.e., participation for a couple of years, a shift away from exercise, and later a shift back.

Further exploration of the trends question can be carried out with reference to specific activities. Several surveys reported data by activity. Although some surveys presented data for as many as 30 activities, information for selected activities including the most popular ones, has been synthesized. Exhibit III-34 presents data ordered by time of survey and by the most common activities in terms of reported participation rates. The figures do not indicate the extent to which people participate in more than one activity.

There are a few salient qualifications to be kept in mind when reviewing these data. First, the Nielsen surveys and Outdoor Recreation surveyed a number of adolescents, while other surveys started at age 18 or 20. This would account for some of the high estimates for activities covered by those surveys. Conversely, Perrier asks about "regular" participation at any time during the past year, which would depress estimates, and thus its statistics are relatively low for most activities. In addition, the 1975 HIS survey shows percent participation figures only for regular exercisers for some activities, but for all persons for other activities. These and other considerations make it difficult to make definitive statements about the existence of trends, although certain developments can be noted.

To summarize the results, it appears that participation in most activities has been fairly level in the ten year period between 1972 and 1982. There seems to be a trend toward greater participation in running/jogging, tennis, and racquetball. These activities are usually carried out vigorously and are considered to have aerobic benefits and are among those which have received

EXHIBIT III-34

PERCENT PARTICIPATION FOR SELECTED ACTIVITIES FROM NINE SURVEYS

	SURVEY DATE AND NAME								
ACTIVITY	1972 ADULT FITNESS	1973 NIELSEN	1975 HIS	1976 NIELSEN	1977 OUTDOOR RECREATION	1978 PERRIER[d]	1979 NIELSEN	1980 GALLUP	1982 NIELSEN
Walking	40	N/A	34[a]	N/A	68[b]	22	N/A	N/A	N/A
Swimming	15	52	24	49	63[c]	17	49	37	45
Calisthenics	14	N/A	14[a]	N/A	N/A	14	N/A	14	N/A
Bicycling	16	32	11[a]	36	47	13	32	27	32
Bowling	N/A	18	16	21	N/A	13	20	24	18
Running/Jogging	6	N/A	5[a]	N/A	N/A	11	17	12[e]	15
Tennis	N/A	10	11	14	33	9	15	14	11
Basketball	N/A	11	8	12	N/A	7	11	18	11
Softball	N/A	13	9	13	N/A	7	13	16	12
Golf	N/A	8	8	8	16	5	7	8	8
Baseball	N/A	7	5	7	N/A	6	7	10	6
Football	N/A	7	5	7	N/A	4	7	11	6

EXHIBIT III-34 (continued)

NOTES:

a. Percent participation for regular exercisers only.

b. Excludes walks to observe nature, birdwatching, photographing wildlife, hiking, and backpacking.

c. Includes pool swimming and sunbathing, but excludes other swimming and sunbathing.

d. Perrier asked about regular participation in the preceding year.

e. Responses obtained only from those who responded positively to inquiry about regular/daily fitness activities. 26 percent of those exercising daily said they jog.

the greatest amount of attention in connection with the "fitness boom" of the 1970s.

The activities for which the data are least convergent are swimming and bicycling, even when allowing for the high estimates generated by Outdoor Recreation which asks specifically what activities people like to do when they engage in outdoor recreation. This is in contrast to Perrier's inquiry about regular participation. Note also that respondents can easily interpret swimming quite broadly, e.g., going to the pool. Some convergence can be discerned for swimming and bicycling if the surveys are divided into groups. Comparing the four Nielsen surveys, Gallup and Outdoor Recreation with each other and doing the same for the National Adult Physical Fitness Survey, HIS, and Perrier produces two sets of relatively convergent figures. As noted before, the first group (except for Gallup which has the lowest estimates in the group) included respondents under 18 and asked relatively broad questions. The second group included only respondents ages 18 or 20 and older, and focused more on recency or regular nature of activity.

Returning to the notion of trends by looking at activity specific data in light of overall patterns of exercise/physical activity, it seems that the "fitness boom" has not so much attracted new adherents as it has seen a shift by some people in the types of activity they perform. This shift looks to be for the better from a fitness standpoint. Increases in strenuous or vigorous activity either have replaced or supplemented more traditional, less vigorous forms of activity. Indirect support for this idea is provided by the aforementioned finding that many of those perceiving a need for more exercise are those who are already active.

In summary, it would be useful to be able to determine these sub-patterns. But the available data do not provide estimates of participation in sets of activities, e.g., whether those who walk also run. Also, it would be helpful to know how frequently "actives" and "moderates" participate in different forms of activity, and what changes occur over time. Some of this information would require new data, but some progress could be made through further analysis of existing data.

INFORMATION ASPECTS RELATED TO PHYSICAL ACTIVITY

The information aspects of physical activity and exercise investigated in the general population surveys fall into three general categories: levels of fitness-related information, sources of health information, and the desire for such information.

Levels of Fitness-related Information

Only the General Mills survey inquired about levels of fitness and health information of family members and teenagers. In addition, this study demographically compared well informed persons to poorly informed individuals. The only fitness-related question was one that asked about level of information for new ideas on health care and physical fitness. Only 13 percent of the respondents considered themselves well-informed on this topic. Persons who classified themselves as somewhat informed made up 62 percent of the respondents. The remainder, 25 percent, rated their level of information as poor. For teenagers alone, the results are that 31 percent consider themselves very well informed, 42 percent fairly well-informed, and 26 percent poorly informed. One percent was not sure.

On an overall level of general health information, 28 percent of the individuals rated themselves as well informed, 44 percent as somewhat informed, and 28 percent as poorly informed. Demographic descriptions of the well informed and poorly informed groups are shown in Exhibit III-35 below.

Another question from the General Mills survey examined the relationship between information and behavior. When asked whether they were doing more physical exercise than a year ago, the respondents answered affirmatively as follows:

EXHIBIT III-35

COMPARISON OF DEMOGRAPHIC ASPECTS OF WELL INFORMED VERSUS POORLY INFORMED FAMILY MEMBERS FROM THE GENERAL MILLS SURVEY

The Well Informed (28%)	The Poorly Informed (28%)
63% are female	51% are male
80% fall into the middle and high socioeconomic groups	81% fall into the middle and low socioeconomic groups
15% are minorities	24% are minorities
71% live in suburban (29%) and rural/small town areas (42%)	67% live in urban (38%) and suburban (29%) areas
67% are concerned about health	48% are concerned about health
32% are complacent about health	52% are complacent about health
46% are regular exercisers	26% are regular exercisers

- Total public - 23 percent
- Well informed - 30 percent
- Somewhat informed - 21 percent
- Poorly informed - 20 percent.

Interestingly, almost a third of the well informed individuals have begun to do more exercise in the last year. However, the more surprising result, in relative terms, is that the somewhat and poorly informed persons are doing more exercise at two-thirds the rate of those who are well informed.

Sources of Health Information

Two surveys, Health Maintenance and General Mills, asked about sources of information on health care topics. Fortunately, the surveys collected information on a similar list of sources. However, the unfortunate aspect is that they present the information in different ways. The most obvious limitation is that Health Maintenance does not provide totals by category as does the General Mills survey. Exhibits III-36 and III-37 present the two sets of survey results.

Overall, the results show that physicians are the largest source of information. Other major sources include television programs, public service messages, and news stories; magazine and newspaper articles; and publications from voluntary health organizations.

Desire for Health Information

Two of the general population surveys inquired about the desire for health information. Both asked the question(s) in different ways, thus precluding comparability.

Health Maintenance prompted its respondents with a list of items and asked whether they would like more information about the subject. "General information about how to stay healthy" ranked seventh on a list of items about which people would like to know more, with a 51 percent level of response. The effect of

EXHIBIT III-36

SOURCES OF HEALTH CARE INFORMATION BY AMOUNT OF INFORMATION FROM THE HEALTH MAINTENANCE SURVEY

Sources	A Great Deal (Percent)	Some But Not A Great Deal (Percent)	Only A Little (Percent)	No Information At All (Percent)	Not Applicable (vol.) (Percent)	Not Sure (Percent)
Advice by your own doctor or doctors	47	33	14	5	1	*
Public service messages on television or radio (for example, from the Cancer Society on cigarette smoking)	29	43	16	9	1	1
Publications from organizations like the Heart Association, the Cancer Society, etc.	23	39	18	17	2	1
Articles about health in magazines and newspapers	22	45	19	13	1	1
Medical columns in newspapers and magazines	21	41	22	13	2	1
Medical news stories on television and radio	20	45	21	12	1	1
Health courses you have taken in school	15	26	17	25	15	2
Advice from the pharmacist or druggist you use	12	27	23	36	2	1
Friends, relatives or neighbors	10	34	32	22	1	1
Government publications on health	10	33	23	29	3	2

EXHIBIT III-36 (continued)

Sources	A Great Deal (Percent)	A Great Deal (Percent)	Only A Little (Percent)	No Information At All (Percent)	Not Applicable (vol.) (Percent)	Not Sure (Percent)
Advertising by drug companies, food companies, etc.	7	33	31	26	1	1
Advice in booklets from your group insurance carrier	5	23	25	38	7	2
Medical advice from your employer's medical department or in company publications	5	14	16	37	26	1
Medical advice from your union's medical department or in union publications	3	10	11	36	38	2

EXHIBIT III-37

SOURCES OF HEALTH CARE INFORMATION BY LEVEL OF INFORMATION FROM THE GENERAL MILLS SURVEY

Sources	Total (Percent)	Well Informed (Percent)	Somewhat Informed (Percent)	Poorly Informed (Percent)
Doctors and dentists	45	47	47	39
Television programs	31	21	30	40
News stories on TV and in newspapers	29	26	30	30
Columns and articles in popular magazines and newspapers	25	24	24	27
Voluntary health organizations	16	19	18	9
Their own immediate families	16	11	17	18
Medical books and encyclopedias	14	22	13	7
TV commercials and advertising in magazines and newspapers	14	12	12	18
Friends	13	10	12	17
Popular books on health and diet	11	18	9	6
Nutrition labels on products	10	10	11	8
The United States Government	10	12	11	6
Health and physical fitness magazines	9	14	8	7

exercise on health followed next with a 42 percent response level. Knowledge of self-examination techniques for high blood pressure, breast cancer and heart irregularities constituted the leading topic about which people wanted to know more at 70 percent. However, the manner in which the Health Maintenance question was asked may have had the effect of producing higher rates of responses in general. To wit, people may be more inclined to say "yes, I am interested in more information" than to say "no, I am not."

The General Mills survey asked about the one or two kinds of health information that family members would find most helpful. The survey used a list of 14 items to prompt its respondents. The topic of how best to exercise and keep physically fit ranked ninth on the list of responses with 14 percent. The leading response was where to go for help when needed with a 26 percent level of response. Because of the way that this question was asked by General Mills, the level of response for all items is lower due to the limitation on the number of responses. It is interesting that the desire for fitness-related information ranked eighth in one survey and ninth on the other. However, a limitation to further statements about the meaning of two survey results is that the Health Maintenance survey appears to have used a larger list of items than did the General Mills survey. Based on the General Mills results, the desire for fitness-related information, as compared with other health information, is in the average to low average range.

PHYSICAL FITNESS PROGRAMS

Early in the present study, it was thought that one of the primary areas of investigation would involve the collection and description of fitness-related community programs. However, as the process of data collection progressed, it became obvious that information of this nature generally was not available. Only the YWCA and YMCA organizations had fitness and exercise program information.

The YWCA collected and published information on its member associations which include:

- Community YWCAs - 396
- Provisional YWCAs - 5
- Neighborhood Units - 3,674
- Branches and Centers - 285
- Registered YWCA Groups - 22
- Student Associations - 51

Two tables from its Fall 1981 publication, The Print Out,[1] are of interest for this study. Exhibit III-38 presents general information on persons registered in community associations for the year ending August 1980. This table shows that almost 2.36 million persons registered in such associations. The following exhibit, Exhibit III-39, presents the information in the YWCA report pertaining to physical education and athletics. More than 900,000 persons participated in 71,000 physical activity programs during the year ending August 1980. Break-downs by state are available for programs and participation. Unfortunately, there is no further information on the content, duration or other aspects of the physical education and athletics programs.

In March 1982, the YMCA of the USA, with funding support from ODPHP, surveyed its associations and branches to identify existing health enhancement programs in eight specific areas, one of which was fitness and exercise. The YMCA Health Enhancement Survey Report[2] results revealed that 96% of the YMCAs had fitness and exercise programs. In fact, fitness and exercise programs were twice as common as any other form of health enhancement program; the other types of programs and their availability were nutrition and weight management (48%), healthy lifestyles (37%), stress management (28%), hypertension control (27%), smoking cessation (24%), safety (23%), and alcohol and drug abuse (11%).

Specific types of fitness and exercise programs and the percent of local associations offering the program are as follow:

EXHIBIT III-38

NUMBER AND PERCENTAGE DISTRIBUTION BY AGE, ACCORDING TO SEX AND MEMBERSHIP STATUS, OF PERSONS REGISTERED IN COMMUNITY ASSOCIATIONS DURING THE YEAR SEPTEMBER 1979 THROUGH AUGUST 1980 FROM THE NATIONAL BOARD YWCA

	Total Persons Registered		Women and Girls						Men and Boys	
			Total		Members		Nonmembers			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Perce
Total	2,359,956	100.0	1,978,328	100.0	1,227,856	100.0	750,472	100.0	381,628	100.
AGE LEVEL										
Under 6	244,902	10.4	143,118	7.3	----	---	143,118	19.1	101,784	26.
6 through 11	337,621	14.3	233,002	11.8	----	---	233,002	31.0	104,619	27.
12 through 17	301,713	12.8	256,392	13.0	192,528	15.7	63,864	8.5	145,321	11.
18 through 34	600,857	25.5	556,126	28.1	456,004	37.1	100,122	13.3	44,731	11.
35 through 59	389,004	16.5	354,605	18.0	275,415	22.4	79,190	10.6	34,399	9.
60 and over	153,773	6.5	137,637	7.0	98,159	8.0	39,478	5.3	16,136	4.
Not reported	332,086	14.1	297,448	15.0	205,750	16.8	91,698	12.2	34,638	9.

EXHIBIT III-39

NUMBER OF GROUPS AND ENROLLMENT FOR SELECTED TYPES OF GROUPS IN COMMUNITY ASSOCIATIONS, 1979-1980, FROM THE NATIONAL BOARD YWCA

Type of Group	Groups		Enrollment	
	Number	Percent	Number	Percent
Total	120,364	100.0	1,667,867	100.0
Physical education and athletics	71,689	59.6	909,707	54.5
Social development	20,731	17.2	355,289	21.3
Adult education: classes	19,284	16.0	220,117	13.2
Adjustment and/or rehabilitation	3,883	3.2	46,737	2.8
Adult education: interest groups	3,330	2.8	114,384	6.9
Job training and related programs	1,447	1.2	21,633	1.3

- Aerobic dance classes - 92%
- Early morning/noon and evening fitness programs - 86%
- Aquatic fitness classes - 76%
- Personalized programs for fitness - 73%
- Lap running facilities - 69%
- Weight training classes - 67%
- Individual fitness testing - 65%
- "Y's Ways to a Healthy Back" - 53%
- "Y's Ways to Physical Fitness" (complete package) - 42%
- Sport fitness classes, e.g., ski fitness - 42%
- Pre- and post-natal classes - 33%

Some other fitness programs mentioned by respondents included programs for families, youth and seniors; special rehabilitation fitness (e.g., arthritis) programs; starter fitness; and fitness for the handicapped. No other information about fitness program enrollment, frequency, duration, curriculum or other aspects was available from the survey.

Two other surveys, HIS and Roper, provided limited information about exercise and sports in group settings. The HIS survey asked about participation in sports as a team member. Exhibit III-40 presents the HIS information from its 1975 survey with age, sex, race, region, and income disaggregations. Findings from this data indicated that team participation is greatest for white, male persons from higher income families in the North Central and West regions of the country. Participation in team sports decreases dramatically with age. Persons who are non-white, from the South, and from lower income families are the least likely to be engaged in team sports.

Finally, the Roper survey asked about regular exercise or calisthenics with a group. Seven percent of the respondents indicated such participation. In contrast, 30 percent of the persons indicated performing regular exercise or calisthenics on their own.

EXHIBIT III-40

PERCENT OF PERSONS 20 YEARS OF AGE AND OVER REPORTING SPORTS PARTICIPATION AS A TEAM MEMBER FROM THE HEALTH INTERVIEW SURVEY, 1975

Age	Total	Male	Female
All ages	11.2	14.4	8.4
20 - 44 years	16.5	20.7	12.5
45 - 64 years	7.3	8.8	5.9
65+ years	1.5	2.7	0.6
Race			
White	11.7	—	—
All other	7.1	—	—
Region			
Northeast	12.1	—	—
North Central	13.8	—	—
South	7.1	—	—
West	13.2	—	—
Income			
Less than $5,000	4.7	—	—
$5,000 - $9,999	8.3	—	—
$10,000 - $14,999	13.7	—	—
Over $15,000	16.1	—	—
Unknown	5.0	—	—

In conclusion, it would appear that between seven and eleven percent of the overall population participates in group exercises or sports. The YWCA registration statistics represent approximately one percent of the population. Physical education and athletics programs participants represent only 0.4 percent. Thus, even if participation figures were available for YMCA and other community programs and they provided estimates considerably higher than the YWCA's, it would appear that other forms of participation (e.g., company or club) account for a large amount of group participation.

OUTCOMES RELATED TO PARTICIPATION IN PHYSICAL ACTIVITY

In the investigation of information and evidence concerning the effects of physical activity, two groups of recent outcome studies were selected for inclusion in this report. Both groups used large sample sizes to examine the effects of higher versus lower levels of physical activity. In addition, the two groups of studies examined subsets of the U.S. population, as opposed to studies of other countries, e.g., ones by Morris et al.[3-7] The first group comes from Alameda County, California and examines the relationship of health practices to health status and mortality. The second group of studies was performed by Dr. Ralph Paffenbarger and his associates, utilizing select populations of subjects.

Alameda County Studies

The evidence on the relationship of health practices to health status and mortality from Alameda County comprises some of the pioneering work in this area. The studies from Alameda County that have provided useful information on the relationship of physical activity to health status and mortality are:

- Relationship of Physical Health Status and Health Practices by Nedra Belloc and Lester Breslow[8]

- Relationship of Health Practices and Mortality by Nedra Belloc[9]

- Persistence of Health Habits and Their Relationship to Mortality by Lester Breslow and James Enstrom[10]

- Life-Style and Future Health: Evidence from the Alameda County Study by James Wiley and Terry Camacho[11]

Together, these longitudinal studies provide evidence that individuals who engage in "good" health practices—including physical activity—live longer, and are healthier than persons who do not. The discussion of the Alameda County results comes in the order of presentation of the articles shown above. The seven health practices which were investigated in these articles were: desirable weight levels, drinking patterns, amount of sleep, regularity of meals, level of physical activity, and smoking.

In the article by Belloc and Breslow, seven categories of physical health (ranging from severe disability to great vigor without disease impairments, conditions or symptoms) "were converted into a scale on which the average values of a population or sub-population were expressed by a 'ridit' (Relative to an Identified Population)." The average ridit value for a population is .50. Higher values signify poorer health while lower values indicate better health. For instance, a ridit of .60 would mean that 60 percent of the population has better physical health than the person for whom the ridit was caluclated.

Exhibit III-41 shows age- and sex-related ridits for six categories of physical activity. The results indicate that any participation in recreational activity, with the exception of hunting and fishing, is associated with better health status than no participation at all.

The next table, Exhibit III-42, is provided as a summary measure of physical activity. It groups responses from the four categories of physical activity presented in the prior table into three total classifications. Weekend automobile trips were excluded because they do not constitute a physical activity. Hunt-

EXHIBIT III-41

AGE-SEX RELATED PHYSICAL HEALTH RIDITS BY ANSWERS TO QUESTIONS ON PHYSICAL ACTIVITIES FROM THE BELLOC AND BRESLOW ARTICLE

Here is a list of active things that people do in their free time. How often do you do any of these things?	Age-Sex Related Ridits					
	MEN			WOMEN		
	Often	Sometimes	Never	Often	Sometimes	Never
Active sports	.44	.49	.54	.48	.47	.52
Swimming or taking long walks	.47	.49	.53	.46	.48	.55
Working the garden	.48	.51	.52	.46	.50	.54
Doing physical exercises	.46	.50	.52	.46	.49	.53
Taking weekend automobile trips	.48	.50	.54	.48	.49	.54
Hunting or fishing	.49	.50	.51	.50	.50	.50

EXHIBIT III-42

AGE-SEX RELATED PHYSICAL HEALTH RIDITS BY AMOUNT OF PHYSICAL ACTIVITY FROM THE BELLOC AND BRESLOW ARTICLE

	MEN			WOMEN		
Amount of physical activity	Number	Age-sex related ridit	95% Confidence interval	Number	Age-sex related ridit	95% Confidence interval
Often or sometimes engage in active sports, swim, or take long walks, or often garden or do physical exercises	2,775	.49	±.01	3,009	.48	±.01
Sometimes garden or do physical exercises or did not answer	214	.58	±.04	439	.54	±.03
Never do any of these	169	.58	±.04	322	.64	±.03

ing and fishing are not included because of lack of demonstrated positive effects on health. The data from this table show a distinct difference between persons who often or sometimes engage in active sports, swim, or take long walks, or often garden or do physical exercises and those persons who only sometimes garden or do physical exercise, did not answer, or never do any of these things. Better health for physically active persons is indicated by the lower ridit values.

Belloc and Breslow also found that health practices, including physical activity, were independent of each other. More importantly, they found that "good" health habits were additive. In other words, participation in more "good" health practices was associated with better physical status as indicated by lower ridit values.

In the next article by Belloc, the relationship between seven health practices and mortality within five years was examined. With regard to physical activity, the lowest age-adjusted mortality rates for men were clearly associated with participation in active sports (Exhibit III-43). Since few women participated in active sports, the lowest mortality rates existed for those women who reported that they often swam, gardened, or exercised. Furthermore, this study demonstrated that lower mortality was associated with greater involvement in "good" health practices. This indicates that greater participation in "good" health practices is additive for mortality as was the case for physical health status. In addition, this study found that "Mortality, as measured by age-adjusted rates, was more strongly related with poor health practices than it was with physical health status or with income level."

The article by Breslow and Enstrom reported the relationship between seven health practices and mortality over a period of 9 and 1/2 years. Exhibit III-44 presents the age-adjusted mortality rates for various types of physical activity. The physical activity results of this study were the same as the earlier study by Belloc. To wit, greater physical activity was

EXHIBIT III-43

MORALITY RATES (Proportion dying in 5½ years) BY HEALTH PRACTICES BY AGE AND SEX[a] FROM BELLOC ARTICLE

Type of physical activity	MEN						WOMEN					
	Age-adjusted rate	Under 45	45-54	55-64	65-74	75+	Age-adjusted rate	Under 45	45-54	55-64	65-74	75
Often active sports	.038	.009	.026	.059	.143	.200	*	.010	.016	.048	-(5)	-(
Often swim, garden, exercise	.063	.014	.051	.105	.221	.317	.033	.004	.019	.051	.110	.2
Sometimes sports or swim	.060	.005	.066	.061	.154	.533	.042	.011	.031	.059	.150	.2
Sometimes garden or exercise	.080	.014	.019	.152	.303	.539	.043	.006	.011	.044	.184	.3
Never any of above	.114	.031	-(33)	.300	.483	.476	.067	-(106)	.085	.088	.224	.47

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[a] Note: Critical levels for Health Practice Score were determined by the relationship to physical health status, and are indicated by > ; - = no deaths. Number in parentheses is the denomination; * Insufficient numbers in some age categories to calculate age-adjusted rate.

EXHIBIT III-44

AGE-ADJUSTED MORTALITY RATES (PROPORTION DYING IN 9½ YEARS) BY TYPE OF PHYSICAL ACTIVITY AND SEX FROM THE BRESLOW AND ENSTROM ARTICLE

	Age-adjusted rate[a]	
Type of physical activity	Men	Women
Often active sports	0.068	b
Often swim, garden, exercise	0.118	0.065
Sometimes sports or swim	0.124	0.076
Sometimes garden or exercise	0.150	0.082
Never any of above	0.186	0.161

[a] Age-adjusted to the total 1965 survey sample.

[b] Insufficient numbers in age category to calculate age-adjusted rate.

associated with lower mortality rates for both men and women. More generally, the two authors found that the number of "good" health practices was inversely related to mortality. Men who engaged in all seven health practices had mortality rates that were only 28 percent of those who followed zero to three health practices. The comparable figure for women was 43 percent.

The fourth and final study by Wiley and Camacho examined the extent to which health practices can be shown to be predictive of future health status. In the course of this study, the effect of non-participation by a group of Alameda County survivors ("drop-outs") in the 1974 follow-up study was evaluated. Significant differences were found between those who responded to the follow-up survey and those who did not. However, after correcting for the drop-out non-response in the 1974 survey, Wiley and Camacho found that five "good" health practices, including physical activity, were significantly correlated with overall health outcome nine years later.

The authors also made the point that earlier findings could have been "interpreted as showing the effect of health--as a measure of capacity to engage in physical activity--on the rate of activity rather than as an indication of the beneficial effect of such activity on health. Since the health measure used in this paper has been adjusted for the initial level of health, this type of reverse correlation does not seem to be a plausible explanation for our findings." More stringent testing of this statement was conducted; the conclusion was reinforced.

In addition, the authors investigated the possibility of existence of a bias due to measurement errors in the health indicator. After examining the issue, they concluded "that random error of measurement is not a plausible explanation" for their findings. Finally, Wiley and Camacho explored the possibility that other variations affected the results. They found that "the effect of health practices on future health cannot be accounted for by variation in income and education, nor can the importance of socio-economic status to health be explained by class differences in health practices. Both types of factors make significant independent contributions to consequent health."

In conclusion, the results of the studies of Alameda County residents show that discretionary personal health practices, and specifically physical activity, inproved individuals' future health status and reduced their chances of mortality relative to persons not engaging in such health practices. These findings were consistent over time, and the effects were shown to be independent of other possibly confounding variables.

Paffenbarger Studies

In three studies, Ralph S. Paffenbarger and his associates examined the relationship between physical exercise and coronary heart mortality. The studies of interest are:

- Work Activity and Coronary Heart Mortality by Paffenbarger and Wayne Hale[12]
- Physical Activity as an Index in College Alumni by Paffenbarger, Alvin Wing, and Robert Hyde[13]
- Countercurrents of Physical Activity and Heart Attack Trends by Paffenbarger.[14]

The first study identified above examined the level of physical activity of various groups of longshoremen and the relationship of activity to coronary heart mortality. Energy outputs required by job were used to divide longshoremen work activity into three groups: heavy, moderate and light. Then the death rates from coronary heart disease were compared to the level of activity of longshoremen. The comparisons produced the results shown in Exhibits III-45 and III-46.

The authors drew the conclusion that greater physical activity for the heavy work activity persons was associated with reduced risk for heart attacks, especially those where death soon follows. The differential between the heavy versus the moderate and light activity levels continued to exist even after taking into account other risk factors, i.e., smoking, blood pressure, body weight relative to height, diagnosed heart disease, and

EXHIBIT III-45

DEATH RATES FROM CORONARY HEART DISEASE (CHD) AMONG SAN FRANCISCO LONGSHOREMAN IN A 22-YEAR FOLLOW-UP PERIOD, 1951-1972, ACCORDING TO PHYSICAL ACTIVITY OF WORK AND AGE AT DEATH* FROM PAFFENBARGER AND HALE ARTICLE

WORK ACTIVITY LEVEL	MAN-YEAR OF WORK	NO. OF CHD DEATHS	DEATH RATES FROM CHD (PER 10,000 MAN-YEAR)	RELATIVE RISK OF CHD
Heavy				
35-44	8.3	4	4.8	1.0
45-54	11.0	20	18.3	1.0
55-64	7.4	34	46.2	1.0
65-74	1.0	8	76.6	1.0
All Ages**	27.7	66	26.9	1.0
Moderate				
35-44	2.9	2	6.9	1.4
45-54	8.7	35	40.4	2.2
55-64	9.2	61	66.1	1.4
65-74	0.7	9	136.4	1.8
All Ages**	21.5	107	46.3	1.7
Light				
35-44	3.0	1	3.3	0.7
45-54	8.9	27	30.2	1.7
55-64	14.5	122	84.1	1.8
65-74	17.1	275	161.2	2.1
All Ages**	43.5	425	49.0	1.8

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* Work assignment annually according to caloric output required by job.

** Adjusted.

EXHIBIT III-46

AGE-ADJUSTED DEATH RATES FROM CORONARY HEART DISEASE (CHD), 1951-1972, ACCORDING TO INTERVAL BETWEEN SYMPTOM ONSET AND DEATH, PHYSICAL ACTIVITY OF WORK AND AGE AT DEATH* FROM PAFFENBARGER AND HALE ARTICLE

rk Activity Level	Man-Yr of Work ($x10^3$)	No. of CHD Deaths	Death Rates from CHD (per 10,000 Man-Yr)	Relative Risk of CHD
avy	27.2			
Sudden		17	5.6	1.0
Delayed		20	8.8	1.0
Unspecified		29	12.4	1.0
derate	21.5			
Sudden		36	19.9	3.5
Delayed		31	12.5	1.4
Unspecified		40	13.9	1.1
ght	43.5			
Sudden		131	15.7	2.8
Delayed		119	13.2	1.5
Unspecified		175	20.1	1.6

Work assignments reclassified annually according to caloric output required by job.

glucose metabolism. They further stated that "heavy work activity reduced the influence of such high risk factors of coronary heart disease as hypertension, hyperlipidemia, tachycardia, obesity, and others (reference provided)." Follow-up studies on the longshoremen[15-17] showed that 1) the relationship between reduced physical activity levels and fatal heart attacks was most evident in younger and middle-aged men, and 2) other possible non-causal factors did not explain the work activity--fatal heart attack relationship. In the second follow-up study, they concluded that "we believe our findings are consistent with a causal protective hypothesis based on either a direct effect of work activity or an indirect effect through modification of some other known risk factors not adjusted for in the analysis."

In the next study, Paffenbarger, Wing and Hyde examined the physical activity levels of Harvard alumni and their correlation with heart attacks. More specifically, the physical activity measures which were utilized consisted of the number of stairs climbed each day, the number of city blocks (1/12 of a mile) walked each day, and the amount of time spent in active sports. The information then was used to develop dichotomous levels of activity. In addition, a physical activity index was developed based on the number of kilocalories used per week in the selected activities.

The results were that the risk of heart attack was greater for persons who were less physically active with one exception: light sports activities (Exhibit III-47). All other values for the relative risk of a heart attack were statistically significant. In fact, low active alumni were found to have a 64 percent greater risk of heart attacks than their active counterparts. The effect of physical exercise was found to be at least partially independent of other risk factors, e.g., smoking and obesity.

Furthermore, Paffenbarger et al. concluded that heart attack risk was reduced by physical activity of at least 2,000 kilocalories per week for all non-fatal and delayed and unspecified fatal heart attacks (see Exhibit III-48). The exception was

EXHIBIT III-47

AGE-ADJUSTED RATES AND RELATIVE RISKS OF FIRST HEART ATTACK (HA) AMONG HARVARD MALE ALUMNI IN A 6-10 YEAR FOLLOWUP, BY MEASURES OF ENERGY EXPENDITURE FROM PAFFENBARGER, WING AND HYDE ARTICLE

Physical activity in 1962 or 1966	Person-years of observation	No. with HA	No. with HA per 10,000 person-years of observation	Relative risk of HA*	Probability
Stairs climbed daily					
<50	37,946	222	56.5	1.25	.008
50+	76,064	329	45.1		
City blocks walked daily					
<5	24,996	140	57.8	1.26	.016
5+	85,345	385	45.7		
Light sports play					
No	50,606	288	59.8	1.08	.501
Yes	16,032	102	55.3		
Strenuous sports play					
No	66,638	390	54.1	1.38	.001
Yes	45,724	148	39.3		
Physical activity index (kcal/week)					
<2000	56,549	307	57.9	1.64	<.001
2000+	38,027	122	35.3		
Undetermined	23,194	143	47.6		

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* Rate for less active divided by rate for more active.

EXHIBIT III-48

AGE-ADJUSTED RATES AND RELATIVE RISKS OF FIRST ATTACK (HA) AMONG HARVARD MALE ALUMNI IN A 6-10 YEAR FOLLOWUP, BY CLINICAL TYPE AND PHYSICAL ACTIVITY INDEX FROM PAFFENBARGER, WING AND HYDE ARTICLE

Clinical type of HA	PHYSICAL ACTIVITY INDEX <2000 kcal/week No.*	<2000 kcal/week Rate**	2000+ kcal/week No.	2000+ kcal/week Rate	Relative Risk of HA***	Probability
Total	307	57.9	122	35.3	1.64	<.001
Nonfatal	193	36.4	85	24.6	1.48	.002
Angina pectoris	73	13.8	25	7.2	1.91	.005
Myocardial infarction	120	22.6	60	17.4	1.30	.050
Fatal	114	21.5	37	10.7	2.01	.001
Sudden	31	5.8	17	4.9	1.19	.594
Delayed	40	7.5	5	1.4	5.22	<.001
Unspecified	43	8.1	15	4.3	1.87	.090

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* No. with HA.

** No. with HA per 10,000 person-years of observation.

*** Rate for less active divided by rate for more active.

that the risk of a sudden, fatal heart attack was not different for active and less active alumni. Morris, however, found significant differences for both fatal and non-fatal heart attacks between vigorous exercisers and those who were more sedentary.

The third table from this study (Exhibit III-49) shows the relative risk factors for heart attacks with various combinations of physical activity levels, smoking patterns, and history of hypertension. Inspection of this table reveals that greater physical activity in combination with non-smoking status and the absence of hypertension greatly reduced the risk of heart attacks.

The third study by Paffenbarger was presented to a Conference on the Decline in Coronary Heart Disease Mortality. Exhibit III-50 presents the estimates derived by Paffenbarger indicating the average potential reduction in heart attack risk for the Harvard Alumni given that individual changes in adverse health characteristics had taken place. For example, each one hour increase per week in strenuous sports activities would have produced a five percent decrease in risk.

Paffenbarger reaffirmed his earlier findings that higher levels of physical activity were associated with lower mortality. He noted that the current decline in general population death rates may well be linked to the greater levels of physical exercise for the overall public.

SUMMARY

The reasonably large number of well designed and implemented general population surveys conducted within the past ten years, and more specifically concentrated in the last two to five years, has produced a fairly large body of information. Were the data from the different surveys in greater agreement, conclusions about the incidence and prevalence of physical activity behaviors and attitudes could easily be made. Unfortunately, as a result of differential formats and concerns, the hoped-for ideal state

EXHIBIT III-49

AGE-ADJUSTED RATES AND RELATIVE RISKS OF FIRST HEART ATTACK (HA) AMONG HARVARD MALE ALUMNI IN A 6-10 YEAR FOLLOWUP, BY SPECIFIC COMBINATIONS OF LOW PHYSICAL ACTIVITY, CIGARETTE SMOKING HABIT, AND HISTORY OF HYPERTENSION, FROM PAFFENBARGER, WING AND HYDE ARTICLE

Physical Activity index <2000 kcal/week	Cigarette Smoker	History of Hypertension	Person-years of observation	No. with HA per 10,000 person-years of observation		Relative risk of HA*	
+	+	1,712	42	201.9		7.70	
+	+	18,319	100	65.6	73.1	2.50	2.7
+	-	2,618	38	102.3		3.90	
-	+	1,020	9	79.5		3.03	
+	-	26,684	89	35.1	39.4	1.34	1.5
-	+	11,809	49	50.1		1.91	
-	-	1,434	9	41.8		1.59	
-	-	18,648	45	26.2		1.00	

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* Rate for presence of characteristic(s) divided by rate for absence of all three.

EXHIBIT III-50

POTENTIAL REDUCTION IN INDIVIDUAL HEART ATTACK RISK WITH CHANGE IN HARVARD ALUMNI CHARACTERISTICS (CLINICAL INTERVENTION) FROM

Characteristics	Unit change in characteristics	Average reduction in heart attack risk per unit change in characteristics (%)*
Strenuous sports	↑1 hour/week	5.4
Light sports only	↑1 hour/week	1.4
Stair climbing	↑10 stairs/day	0.4
Walking	↑1 block/day	0.5
Cigarette smoking	1+ pack/day → none	51.1
Hypertension	Yes ⟶ No	61.5
Body mass index	↓1 U.S. unit	

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* The percentage reduction with change in each alumni characteristic is based on relative risk estimates of heart attack adjusted for age, follow-up interval, and each of the other six characteristics listed.

of convergence for all surveys was not always obtained. Some general conclusions can be reached on the basis of the available data; as has already been demonstrated for many topics, reasonable convergence was obtained from two and sometimes more sources of data.

Briefly summarized, with respect to the issue of how many people engage in exercise or sports on a fairly regular basis, we can say that between 36 and 59 percent of the general population do so. The actual number depends on the definition of regularity which is used as well as the time period about which respondents are queried. In addition, we can state that higher participation rates are shown by:

- Younger as opposed to older people
- Men as opposed to women
- Whites more than non-whites
- Persons with higher levels of education
- Individuals of higher as opposed to lower family incomes
- People living in suburban as opposed to urban or rural/small town communities
- Individuals residing in the West, with the lowest participation rates shown by individuals who live in the South.

There was an insufficient amount of information to permit a reliable determination of the average amount of time people spend in exercise or sports. Overall, the level of participation in regular exercise appears to be remaining constant, despite indications that 60 percent of the regular exercisers have begun such activity within the past two years. However, this implies that a similar percentage of former regular exercisers ceased such participation within the past two years. This assumption, and by implication the preceding statistic, seems inflated. Further information on this point would be useful in understanding the trend in regular exercise participation levels.

With regard to preferred activities, rank-ordering the activities investigated within each relevant survey and then comparing the ranks obtained resulted in the following list of the top ten activities (in order of popularity/participation rates):

- Walking
- Swimming
- Bicycling
- Bowling
- Calisthenics
- Hiking
- Softball
- Basketball
- Running/jogging
- Tennis.

In general, no dramatic changes in overall participation were evident during the 1972-1980 period. That finding suggests that the reports by large segments of the population that they have taken up exercise recently might be spurious, that a large number of people have ceased exercising, or that intensity of participation has changed while the basic rates have not. The available data do not permit a more definitive conclusion. A trend was noted toward greater participation in running/jogging, tennis and racquetball over this period of time, which appears to reflect a shift toward more strenuous or vigorous activities.

Examination of the data to identify the one best single reason that people begin to engage in physical activity was not productive. What was very clear, however, is that a doctor's recommendation did not serve as a particularly powerful motivation for initiating physical fitness behaviors. Otherwise, the most accurate conclusion which can be reached from the available data is that people gave a variety of reasons for engaging in physical activity behavior; these included so-called "fitness" reasons, as well as reasons centering around personal enjoyment.

Analogously, individuals derived a variety of benefits, both physical and psychological, from physical activity participation. Also, it appeared that higher levels of activity were associated with higher amounts of perceived benefits.

It was clear that lack of time was perceived as the greatest obstacle to getting exercise, with lack of motivation/discipline, lack of interest/liking and poor health being cited as well, although less often. Most of these barriers are self-imposed. According to the data, involvement in physical activity and exercise could be increased by a physician's recommendation or better weather.

With regard to general attitudes and perceptions about physical fitness, it seems that although most people were at least somewhat satisfied with their physical condition, a significant proportion (over 40 percent) did not feel they were getting enough exercise. Despite this result, individuals felt that they were doing the same as, or better than, their peers. It was also the case that people overwhelmingly agreed that aerobic exercise is the most important form of exercise. The inference that this attitude is most likely the result of recent information and events is supported by the observation that older individuals were the least well informed about physical fitness activities.

Unfortunately, it appears that the people who are least active are most likely to remain inactive. Certainly, one source of potential attitude change which could be utilized toward altering this association is the physician, who still appears to be people's most consistently cited source of information about fitness.

Outcome Studies

Several studies which investigated the direct effect of physical activity on mortality (mainly from coronary heart disease) were reviewed. Although some of these studies were conducted with somewhat homogeneous populations, the results—

which all pointed to a close connection between physical activity and longevity—were unequivocal and compelling, and clearly support the need for encouraging additional studies designed to enable greater generalizability and causal inferences.

Other Data Sources

In addition to the sources of data reported in this and succeeding chapters, a number of other sources were identified. For example, results from a provincial and a nationwide survey from Canada were obtained. As a result of problems of non-comparability, these results are not included in the main body of the report; however, they are included in Appendix B. In addition, results from a number of state-wide surveys were considered to be sufficiently restricted to be excluded from the text; these results are in Appendix C.

Future Surveys

As a result of The Granville Corporation's intensive review of available information on physical activity and exercise behaviors and attitudes, a number of surveys which will be providing future information were uncovered. In some cases, the surveys have been completed but the results are not yet available. In other cases, surveys are to be conducted in the near future. Appendix D provides all of the currently available survey instruments from which physical fitness and exercise information is expected.

In addition, ODPHP is currently sponsoring a large-scale study to provide up-dated fitness status information for schoolchildren and youth based on state-of-the-art measures, along with an assessment of the physical activity patterns of these groups, and an analysis of the association between activity patterns and fitness status.

IV. EMPLOYEE FITNESS PROGRAMS

INTRODUCTION

This chapter examines the available secondary data concerning fitness programs sponsored by employers. A survey of employers was originally part of the planned work under this segment of the contract. Disallowance of the survey approach by OMB led to the collection of secondary data from a number of sources. However, the search yielded little in the way of valid and reliable data concerning the nature and extent of employee programs.

A number of items which had surfaced in the initial identification of sources were found to be lacking. Specifically, several articles were reviewed which discussed the general move toward employee fitness programs and the benefits of such programs. However, these sources did not provide data that would allow generalizations about the kind and extent of available programs. Rather, they were either prescriptive and talked about how to set up a program, or were promotional and focused on the benefits and desirability of such programs (e.g., improve morale, increase productivity). Other sources presented information from controlled studies conducted to assess the effects of an employee fitness program intervention.

Finally, an American Association of Fitness Directors in Business and Industry (AAFDBI) survey of its members was identified as a promising data source early in our search for sources. However, attempts to locate the AAFDBI survey results were not completely fruitful. A copy of the full report was sought from several past and present AAFDBI officers, the President's Council on Physical Fitness and Sports, and the firm which conducted the study. Only a brief synopsis of the findings however has been published. In addition, the survey was limited to AAFDBI members, thereby confining it to organizations already having fitness programs. Thus, it provides no information on the incidence of fitness programs, only data on their characteristics. Such information, while interesting, does not provide generalizable data.

Little opportunity or need to engage in analysis of the convergence of study results existed since only one of the available sources generally provided appropriate data.

Information that was available is organized in this chapter by the categories of:

- Incidence and characteristics
- Program Cost
- Facilities
- Eligibility
- Participation
- Benefits

INCIDENCE AND CHARACTERISTICS

The incidence of employee fitness programs represents our initial major concern. Several studies and surveys offered relevant estimates: Health Maintenance;[1] Fitness Systems' survey entitled Corporate Fitness Programs: Trends and Results;[2] the Administrative Management Society's (AMS) survey of 500 companies regarding fringe benefits;[3] and the National Heart, Lung, and Blood Institute's (NHLBI) survey of Dunn and Bradstreet firms.[4] A summary of the results is presented below in Exhibit IV-1.

In examining these results, it is important to consider the characteristics of these four surveys. Fitness Systems surveyed 600 companies by mail—the top 300 industrial firms (as listed in Fortune magazine) and the top 50 of six other categories. A total of 130 responses were received for a response rate of only 21.7 precent. This low response rate is a limitation to the Fitness Systems survey results.

Fitness Systems defined companies with fitness programs as those which fulfilled at least three out of six criteria set forth by the President's Council on Physical Fitness and Sports. These criteria are that: (1) the exercise program is an adjunct of the company's health program; (2) it includes a medically ori-

EXHIBIT IV-1

SURVEY STATISTICS AND PERCENT OF FIRMS WITH EMPLOYEE FITNESS PROGRAMS FROM FOUR SURVEYS

	Fitness Systems	Health Maintenance	AMS	NHLBI
Number of firms surveyed	600	209	500	6,000
Number of respondents	130	209	329	4,800
Survey response rate	21.7%	100%	65.8%	80.0%
Number of firms with employee fitness programs	34	N/A	58	N/A
Percent of responding firms with employee fitness programs	26%	13%	18%	30%

ented. screening as a criterion for participation; (3) a person skilled in prescribing exercise directs the program; (4) exercises are tailored to the individual and emphasize progressive improvement; (5) activities are non-competitive; and (6) a system of periodic evaluation is included to measure individual improvement and to aid in program design.

The Administrative Management Society surveyed a "committee of 500" managers in 1981 with a return of 329 responses. No information was provided to indicate how this group was constituted in terms of company size, type, or geographic distribution. Also, In addition, an unspecified number of Canadian companies were included.

NHLBI reports having surveyed 6,000 firms in 1980 concerning the use of health hazard appraisals in industry. A simple random sample of the Dunn and Bradstreet listings (excluding smaller firms—i.e., those having less than 100 employees) was selected. In asking about other health promotion programs, the survey found that 30 percent of the 4,800 companies responding indicated having fitness programs. As with AMS 500, we have no information on characteristics and distribution.

Health Maintenance, the study extensively cited in the chapter on general population participation, surveyed business and union leaders, as well as the general public. The survey report indicates that a "representative cross-section" of 176 companies was selected from a list of the Fortune 1,250, after insurance companies were removed. The union sample consisted of 35 drawn from a list of locals of the largest unions in the 15 largest U.S. cities. Business and union respondents were asked if their organization or health care provider makes available to employees/members various types of preventive health care programs. The program type of interest for our present purpose was "opportunities and facilities for physical exercise at work." In addition to the 13 percent of business executives who responded positively, 11 percent of the unions indicated that their employers provide for such a program.

Overall, there seems to be little grounds for explaining the difference between the higher estimates provided by Fitness Systems and NHLBI and the lower estimates given by the Health Maintenance and AMS 500 surveys. Except for AMS 500, the surveys reported having sought information from companies that were generally large in size. The AMS 500 survey did not provide any data on company size. It is very likely that inclusion of smaller companies would have had the effect of reducing the estimates of incidence. The restrictive definition used by Health Maintenance suggests that its 13 percent estimate is low, because fitness programs and activities sponsored by the employer but located away from work (e.g., a fitness program at the YMCA) are excluded. Thus, the 18 percent estimate from AMS 500 may be the more appropriate figure to use as the low estimate of the percentage of companies with fitness programs.

A characteristic of employee fitness programs related to incidence is the rate at which such programs are being estab-

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lished. Although various source organizations made the general point that these programs are being established at a rapid rate, only Fitness Systems provided any hard data. Specifically, of the 34 companies having programs, 27 had established them during the 1970s, with most of those coming into being between 1976 and 1979. Similarly, a number of companies without programs (14 of 96) at the time of the survey in the Spring of 1979 indicated plans to establish programs by 1981. Here again, caution in reviewing these results is suggested because of the small numbers involved. Also, the low response rate (only 130 out of 600 companies contacted responded) suggests that many of the respondents might be predisposed in favor of fitness programs, thus making the estimates of planned program establishment misleadingly high.

Fitness Systems' survey also indicated the extent to which responding companies offer health care programs other than fitness. From 53 to 59 percent of the companies reported offering diet/nutrition, smoking cessation, and stress management programs. About two-thirds offered some form of program designed to deal with alcohol/drug problems, and the vast majority provided physical examinations. However, in many cases, eligibility was restricted to certain subsets of employees.

During the period of September to December 1979, an AAFDBI survey[5] was conducted to determine the characteristics of their members' employee fitness programs. Noting that the survey was confined to organizations with employee fitness programs, the results from 142 members were:

1) 55 percent of the programs contained combined elements of cardiovascular fitness, sports, and strength development; 32 percent were devoted entirely to cardiovascular fitness; and 7 percent were confined to recreational and sports activities.

2) 32 percent of the programs had one full-time staff person, 40 percent had 2 to 4, 7 percent had 5 to 9, and 8 percent had 10 or more. Thirteen percent had no full-time staff.

3) 32 percent of the programs had only liability waiver as the entry requirement, another 17 percent required approval by a physician, and 47 percent required a stress test for entry.

4) 48 percent of the programs reported little or no medical supervision, 32 percent had moderate physician supervision, and only 20 percent had strict medical supervision.

5) In terms of numbers of participants, the distribution among the employee fitness programs was:

   — 1 to 25 persons - 17%
   — 26 to 75 persons - 18%
   — 76 to 200 persons - 20%
   — Over 200 persons - 45%

6) Medical-physiological measurements were used frequently by 42 percent of the programs, occasionally by 35 percent, and rarely or not at all by 23 percent.

7) Regular and objective measures of attitude and performance were conducted in one-third of the programs while the remainder used subjective or informal measures.

8) 61 percent of the programs had indoor and outdoor facilities, 28 percent had only indoor facilities, and 9 percent used only outdoor facilities.

PROGRAM COST

Almost no information is available about the cost of employee fitness programs. Obviously, programs vary in their scope and quality with attendant differences in cost. The Fitness Systems' survey recorded a range of $300-$900 per participant (with participation estimated at 30-60 percent) for programs with full-time qualified supervision where facilities are provided. Programs providing facilities, but only part-time supervision, showed costs ranging from $250-$350 per participant (with participation estimated at 20-40 percent). The provision of indirect supervision without providing facilities can cost as little as $50 per participant (with participation estimated at 15-20 percent). Additional data from Fitness Systems indicated that of

77 total companies, 12 have costs of less than $300 per participant, 11 have expenses of $300 to $900, and 4 have costs exceeding $900 per participant. Similar estimates were reported in an article by Kondrasuk.[6] The article cited a range of $50-$1,000 per employee, but provided no explanation of the figures.

Another aspect of the cost issue concerns the amount of support for fitness programs provided by companies. The AMS 500 survey indicated that most companies (24 of 26) with in-house programs pay all costs. Those which support programs off-site typically require employees to pay part of the costs. Only five of 29 companies in this category bear all costs.

Similar information from the Fitness Systems survey on the costs borne by participating employees reveals that, of 51 total programs on which information was available, 30 (58.8%) require no employee contribution. Another three (5.9%) require a $1 to $99 contribution, 15 more (29.4%) require from $100 to $200, and the remaining three (5.9%) have employees bear more than $200 of the costs of the employee fitness program. Because the Fitness Systems data were not broken down by on-site and off-site facilities, they cannot be directly compared to the AMS data.

FACILITIES

As noted above, employee fitness programs vary greatly in scope and nature. One important variable is the provision of facilities. Again, little information is available. The AMS 500 survey found that 26 of 58 companies which have fitness programs provide an "in-house program," presumably (according to AMS) including special facilities.

In terms of absolute costs, Edwards and Gettman[7] cited 1975 figures ranging from $2,000 to $73,000 for corporate gymnasium investments. In Fitness System's survey, 12 companies reported original investments in facilities and equipment of less than $100,000, two companies invested $101,000-$250,000, and seven invested more than $250,000. The data as reported do not indicate the number of locations covered by the dollar figures, although we suspect that more than one location is involved in some of these cases. The National Aeronautics and Space Administration[8] (NASA), which has one of the most often referenced employee fitness programs, indicated a cost of $7,500 for a defined list of exercise equipment. The equipment includes treadmills, exercise bicycles, rowing machines, wall pulleys, balance beams, weights, and several other items. NASA notes that its space (4,400 square feet) and equipment permit 20-25 persons to use the facility each hour. Finally, at the extreme is the Kimberly Clark Corporation, which spent $2.5 million for its physical fitness center.

ELIGIBILITY

Another aspect of interest is eligibility. The Bureau of Labor Statistics (BLS) conducts a yearly Level of Benefits Survey[9] that includes a question regarding recreational facilities provided by employers. More than 1,500 firms, judged to be representative of private sector establishments with at least 50, 100, or 250 employees (depending on the industry) in the continental United States, were surveyed. The companies were asked whether they provided: "full or partial defrayment of the cost of providing recreational benefits such as swimming pools, tennis courts, gyms, uniforms and trophies; or membership in country clubs, resort facilities, etc." Partial defrayment was defined as at least $50 a year for all employees.

Although the category of recreational facility is too broad to show specific activities directly contributing to employee fitness, and the percent of employees eligible for recreational benefits gives no indication of employee participation, the study is very important in that it does indicate a baseline of non-availability of fitness programs on a national level.

The survey indicated that 73 percent of all employees have no opportunity to participate in any form of fitness program through work. The percentage could be higher than reported if the category of recreational benefits did not include the provision of uniforms and trophies. Also, the very small amount of $50 qualifying as partial defrayment probably results in misleadingly high estimates of the proportion of employees who receive significant levels of support.

Exhibit IV-2 shows the BLS information on employee eligibility for recreational benefits by type of employee. No breakdowns are available to indicate either the levels or types of benefits offered. Overall, the data indicate that professional and administrative workers are somewhat more eligible (28 and 35 percent) than clerical/technical and production workers, respectively.

Fitness Systems found that in 22 of the 55 fitness program locations covered by responding companies, eligibility was restricted to executivos/management and/or medically selected personnel. In other words, roughly half of the employee fitness programs covered by the Fitness Systems survey exclude most or all of clerical/technical and production workers. This appears to contradict the findings of the BLS Level oe Benefits survey, but possibly can be explained by the fact that the minimum contribution constituting a "recreational beneift" is miniscule in the BLS survey. Further cooperation may be donating trophies to its production/clerical workers' bowling league, while providing memberships in a health spa to its executives.

Fitness Systems also indicated higher participation rates for those programs with limited eligibility than for those with eligibility extended to all employees. This is predictable for two reasons:

- Restricted eligibility programs are smaller so higher participation rates are easier to achieve
- Management personnel are more educated and have higher incomes than employees in general. It is useful to remember that education and income are positively associated with exercise participation.

EXHIBIT IV-2

PERCENT OF FULL-TIME EMPLOYEES ELIGIBLE FOR RECREATIONAL BENEFITS PROVIDED BY PRIVATE COMPANIES

Percent Eligible	EMPLOYEE GROUPS Professional/ Administrative	Technical/ Clerical	Production
Non/Eligible	70	75	73
1 to 50%	Less than 0.5 percent	Less than 0.5 percent	1
100%	23	18	17
Not Available	7	7	9

PARTICIPATION

The Fitness Systems survey is the only source of information on participation rates for employee fitness programs. It provides information on total participation and broken down by eligibility groups, type of program development and facility access time.

Exhibit IV-3 presents participation data by eligibility groups. For participation rates of less than 20, 20 to 39, and 40 to 59 percent, there were roughly an equal number of program locations. In contrast, only four program locations (or 9% of the total) indicated participation rates of 60 percent or more. All four of these programs locations restricted elgibility to management and medically selected reasons. Overall, the range varies from less than ten percent participation to more than 80 percent. When participation rates by eligibility groups are examined further, the majority of fitness program locations that are restricted to management and medically restricted to management and medically selected individuals are found to have participation rates over 40 percent. In programs for all employees and for salaried and tenure persons, the opposite is true. Both groups have participation rates concentrated below 40 percent. Thus, the restricted programs were found to have higher participation rates.

EXHIBIT IV-3

NUMBER OF EMPLOYEE FITNESS PROGRAM LOCATIONS IN BY LEVELS OF PARTICIAPTION FROM THE FITNESS SYSTEMS' SURVEY

	Participation Rates			
Eligible Groups	Less than 20 percent	20 to 39 percent	40 to 59 percent	60 percent and over
Management and medically selected persons	6	4	8	4
All employees	7	8	4	—
Salaried and tenure	1	13	—	—
All groups	14	13	12	4

The type of program development also affects participation rates. The three categories of program development used by Fitness Systems consisted of individually tailored, standard entry level and preset progression rates, and self-determined programs. Individually tailored programs were defined as fitness programs that were specifically matched to an individual's needs. This type of program would be most likely to involve part-time or full-time supervision. The standard entry level and preset progression rates type of programs consisted of exercise programs where participants were expected to follow a preset exercise regimen. The self-determined programs allowed the individuals to establish their own exercise regimen.

The results from the Fitness Systems survey revealed that 38 of the 51 fitness programs were tailored to individuals' physical condition. Nine were set up as standard entry level and present progression rates while four were self-determined. As shown in Exhibit IV-4, the vast majority of the programs with participation rates over 40 precent were individually tailored. However, more than half of the individually tailored programs had participation rates of less than 40 percent. In contrast, more than half of the standard entry level and preset progression rate programs and all of the self-determined programs had participa-

EXHIBIT IV-4

RATES OF PARTICIPATION BY TYPE OF PROGRAM DEVELOPMENT FROM THE FITNESS SYSTEMS SURVEY

	Participation Rates			
Program Development Type	Less than 20 percent	20 to 39 percent	40 to 59 percent	60 percent and over
Individually tailored	55%(11)	77%(10)	92%(11)	100%(6)
Standard entry level and preset progresstion rates	25%(5)	23%(3)	8%(1)	—
Self-determined	20%(4)	—	—	—

NOTE: The number of programs inferred from the Fitness Systems data are shown in parentheses.

tion rates of less than 20 percent. Thus, the use of individually tailored programs is likely to induce, but not assure, higher participation rates.

The third factor that influenced participation rates was the time periods during which employees had access to fitness facilities. Overall, Fitness Systems found that 26 programs allowed access during working hours while 15 restricted access to off-work hours only. Ten programs had split access times, i.e., access for management during work hours and access for other employees during off-work hours only. In Exhibit IV-5, the distribution of access time is shown for the specified participation rate categories. It is worth noting that employee fitness programs with higher participation rates (i.e., 40 percent and over) generally provided facility access time during working hours. Conversely, programs with participation rates under 40 percent more typically limited access to off-work hours or provided split access time.

BENEFITS

A great deal has been written in recent years on the benefits of employee fitness programs. A number of studies,[10-14] have shown that fitness programs result in better physical condition and reduced coronary risk factors for employees. More specifically, significant improvements have been demostrated for strength, flexibility, endurance, and cardio-vascular health (as indicated by pulse rate, blood pressure, cholestrol levels, body weight, and heart rate recovery). However, significant results are not always found for some of the cardio-vascular health indicators, e.g., body weight and cholestrol levels.

EXHIBIT IV-5

RATES OF PARTICIPATION BY FACILITY ACCESS TIME FROM THE FITNESS SYSTEMS SURVEY

	Participation Rates			
Facilty Access Time	Less than 20 percent	20 to 39 percent	40 to 59 percent	60 percent and over
During working hours	20%	69%	70%	100%
Split: management during working hours, others off work time only	25%	23%	15%	—
Off work time only	55%	8%	15%	—

In addition to improvements in physical health, it is also of interest to know what changes in absenteeism, productivity, morale and health care costs have been found to be a result of employee fitness programs. Overall, little hard data on these aspects has been found. The strongest evidence uncovered concerned absenteeism. Bjurstrom and Alexiou, Hicks et al., and Fitness Systems all reported reduced absenteeism on the part of employees who took part in fitness programs. However, self-selection of participants in employee fitness programs could be a factor that biases the reported findings.

Regarding job satisfaction and job performance, no hard data are available to support the existence of changes associated with fitness programs. Studies that do indicate positive benefits, such as Heinzelmann and Durbeck, relied on the self-reports of employees. In contrast, a controlled study by Edwards and Gettman was unable to show any significant changes related to job satisfaction or performance.

Finally, in terms of health insurance claims, a study at Purdue University [15] found that persons who exercise more have the same number of health insurance claims, but that the dollar amounts are less.

SUMMARY

As initially noted, available data regarding the extent and nature of employee fitness programs are limited. Further, much of the information that has been collected suffers from arbitrary sample selection, deletion of smaller companies, limitations related to the data collection procedures, and analyses and conclusions that were sometimes based on very small numbers of companies. Other, well-designed studies were typically restricted to small occupational groups, e.g., Paolone et al. Thus, from a research standpoint, the employee fitness results are flawed and do not provide generalizable data.

Overall, the results of the extant studies suggest the following conclusions about employee fitness programs:

- The incidence of employee fitness programs runs between 18 and 30 percent for larger companies, depending on the definition of fitness program that is used
- Fitness programs were being established more frequently in the late 1970s than at any previous time
- Operational costs run between $50 and $1000 per participant depending on the type of supervision and facilities provided
- Fitness facilities can be very inexpensive or very elaborate, depending on the needs and the desires of the sponsoring organization.
- Eligibility is greater for management and administrative personnel
- Participation rates range from less than 10 percent to more than 80 percent. Restricted eligibility, individually tailored programs, and facility access time during working hours all positively influence participation rates
- Psychological benefits have been demonstrated for fitness program participants, but other benefits, save for reductions in absenteeism, generally have not.

While all of the information reviewed suggests the efficacy of employee fitness programs, as well as a trend toward establishing more of them, no broad based information exists on several important points. These include:

- The benefits to employers and employees of fitness programs in comparison with other alternative preventive health measures such as stress management, alcohol and drug abuse control, or smoking cessation
- The extent to which those participating in employee fitness programs are already active and fit versus those who are inactive and would show the greatest benefits

e. The prevalence of employee-fitness programs among the full range of employers, and the factors facilitating or inhibiting program initiation.

V. SCHOOL FITNESS PROGRAMS

INTRODUCTION

The focus of this chapter is on student physical activity patterns in sports and exercise and physical education programs in schools. Information on competitive sports, physical education, and other forms of student physical activity was collected for elementary and secondary schools and colleges. In addition to program and participation information, data on the physical fitness status of students was sought.

Only a few sources were found that provided national data bases concerning physical activity and exercise in schools. Four surveys by national high school and college associations provided most of the available data. Save for one instance, similar data from more than one source were not found. Thus, comparisons of survey results and analyses of differences generally were not possible.

In general, school data were collected for the years 1975 to 1981. The most extensive trend data were obtained from the National Collegiate Athletics Association (NCAA) and described college programs and student participation for five year intervals between 1956 and 1976.

Information was not available for several significant aspects of physical activity and exercise. For instance, data on curricula content of physical education classes were sought but could not be found. Such data could have indicated the nature and range of physical fitness activity in schools as well as the type of health promotion information taught in physical education classes. Also, the frequency of such classes, the availability of school facilities, funding and staffing levels all constitute additional elements that for the most part were missing. The only exception was information on facilities that came from the NCAA. Finally, information about the physical fitness status of students was sought as an item of particular interest to ODPEP. Such information was available only for students aged 10 to 17 via norming studies of the Youth Fitness Test. This test is administered by an unspecified number of physical education instructors each year, but its results generally are not aggregated at either the state or national level. The exceptions to the general practice of non-aggregation of test results were through area probability samples and consequent testing of public school students conducted in 1958, 1965, and 1975 for the purpose of establishing norms for the Youth Fitness Test.

Two potential sources of national data identified in an earlier report for this study are not included in this assessment. Specifically, the National Center for Education Statistics' Survey of Course Offerings, Enrollments and Curriculum Practices was conducted in the 1972-73 school year and has not been repeated. Thus, it was judged to be too old to contribute meaningfully to an inventory of current practices. Further investigation of NCES' Elementary and Secondary Education General Information Survey also proved unproductive, in that the agency reported that its data contained no breakdowns for physical education.

ELEMENTARY SCHOOLS

Available information for elementary schools includes state certification requirements for physical education instructors in elementary and secondary schools and physical fitness status measures.

The instructor certification requirements data were collected in a 1977-1978 survey[1] by the American School Health Association. In that survey, states were asked to identify certification requirements for school nurses, physicians, sanitarians, and teachers of health. The results reveal that 14 states and the District of Columbia have joint certification requirements for health and physical education teachers, and that Wisconsin offers separate certification for physical education. No certification requirements are noted for physical education instructor for the remaining 35 states. In addition, certification in health education for teachers of health is required in 32 states. The responses for all 50 states and the District of Columbia are presented in Exhibit V-1.

The 1975 and prior national normings of Youth Fitness Tests were administered to both elementary and secondary school students; the results however are most easily presented together in the high schools section below.

No other data were found which had been aggregated at the national level about elementary school programs or student participation in physical activity.

HIGH SCHOOLS

The primary sources of data for high school programs and student participation were the National Federation of State High School Associations (NFSHSA-1978-79, 1979-80, 1980-81),[2] Office of Civil Rights in the U.S. Department of Education (OCR/DE - 1978, 1980),[3] and the Youth Fitness Test norming results.[4] Some additional information came from the National Center for Education Statistics (NCES-1975-76),[5] and from the U.S. Bureau of the Census (USBC - 1978, 1979, 1980).[6] The high school information below is presented for interscholastic sports participation, intramural sports participation, physical education programs, physical fitness levels, and trends in sports and physical activity.

At the time of the 1981 survey (1980-81 school year), NFSHSA membership contained 19,900 senior high schools, of which 90.7 percent were public schools, and 9.3 percent private. The number of schools responding to each of the 1981, 1980, and 1979 surveys is not known. Total student enrollment for all senior high schools was reported by the NFSHSA, but not by sex.

EXHIBIT V-1

SCHOOL HEALTH EDUCATOR CERTIFICATION

State	Health Education	Health, Physical Education	Comments
Alabama			Must have minor in health, physical education, and/or recreation
Alaska			Teacher certification only
Arizona			Teacher certification only
Arkansas	X		17 semester hours of health education
California	X		A health science specialist instruction credential has been established
Colorado			Teacher certification, additional requirements may be set by local school district
Connecticut	X		
Delaware	X		
District of Columbia		X	
Florida	X		
Georgia	X	X	
Hawaii	X	X	
Idaho	X	X	
Illinois	X		
Indiana	X		
Iowa			Teacher certification only
Kansas	X		18 hour semester requirement
Kentucky	X		
Louisiana			Listed as Health and Safety Education Certification

EXHIBIT V-1 (continued)

State	Health Education	Health, Physical Education	Comments
Maine			Teacher certification only
Maryland	X		18 semester hours in health education
Massachusetts	X		
Michigan	X		
Minnesota	X	X	
Mississippi		X	
Missouri	X		
Montana	X	X	
Nebraska	X	X	
Nevada			Major or minor in health education
New Hampshire	X		
New Jersey			NASDTEC Standards
New Mexico	X		
New York	X		
North Carolina			Recommended guidelines for professional preparation
North Dakota			No requirements
Ohio	X		
Oklahoma		X	
Oregon	X		
Pennsylvania	X		
Rhode Island		X	

EXHIBIT V-1 (continued)

State	Health Education	Health, Physical Education	Comments
South Carolina	X	X	
South Dakota			No requirements
Tennessee		X	
Texas	X	X	24 semester hours in health education
Utah			Major or minor in secondary education in health
Vermont			Teacher certification
Virginia	X	X	
Washington	X	X	
West Virginia	X		
Wisconsin	X		Separate certification for health and physical education
Wyoming	X		Minor, major or master's degree in health education

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SOURCE: 1977-78 American School Health Association Survey, as reported in School Health in America, 2nd edition, USDHEW, Aug. 1979.

Interscholastic Sports

Participation data for 39 interscholastic sports are available for the nation as a whole and individually for the 50 states and the District of Columbia. The NFSHSA Annual Sports Participation Survey collected 1980-81 data which are shown in Exhibit V-2. The results indicate that the ten sports with greatest participation by boys are, in order of popularity, football, basketball, outdoor track and field, baseball, wrestling, cross country running, soccer, tennis, golf, and swimming and diving. For female students, the top ten sports are basketball, outdoor track and field, volleyball, softball, tennis, cross country running, swimming and diving, gymnastics, field hockey, and soccer.

Overall, absolute levels of participation are higher for boys than for girls. Nine of the ten sports for boys have cases of individual participation exceeding 100,000 as compared to only five of the ten girls' sports. Given the nearly equal sexual balance in high school enrollments, this means that cases of individual participation by boys are greater (by roughly 50%) than such cases for girls.

While it would be useful to know the actual number of students participating in interscholastic sports, the data do not allow for adjustments for persons participating in more than one sport. Thus, commentary on cases of individual participation must suffice.

Intramural Sports

Proportional participation in high school intramural sports was obtained from NCES (1978), and is presented in Exhibit V-3 with interscholastic participation data from the same year for purposes of comparison. The level of participation of girls in intramural sports is far more nearly equal to that of boys than is the case in high school interscholastic sports. However, again, data are not available to indicate absolute numbers of intramural participants.

EXHIBIT V-2

PARTICIPATION IN 39 HIGH SCHOOL INTERSCHOLASTIC SPORTS, FOR BOYS AND GIRLS, 1980-81

	BOYS Number of Participants	GIRLS Number of Participants
Archery	220	501
Badminton	444	9,608
Baseball	422,310	—
Basketball	553,702	423,568
Bowling	6,761	6,272
Canoeing	219	128
Crew	430	120
Cross Country Running	172,270	90,224
Curling	64	—
Decathlon	378	—
Drill Team	—	9,786
Fencing	708	504
Field Hockey	—	55,656
Football-11-man	937,901	—
9-man	6,738	—
8-man	12,625	—
6-man	1,159	—
Golf	118,390	32,828
Gymnastics	13,293	64,815
Ice Hockey	25,925	56
Judo	252	3
Lacrosse	13,501	4,942
Pentathlon	—	266
Riflery	2,991	795

EXHIBIT V-2 (continued)

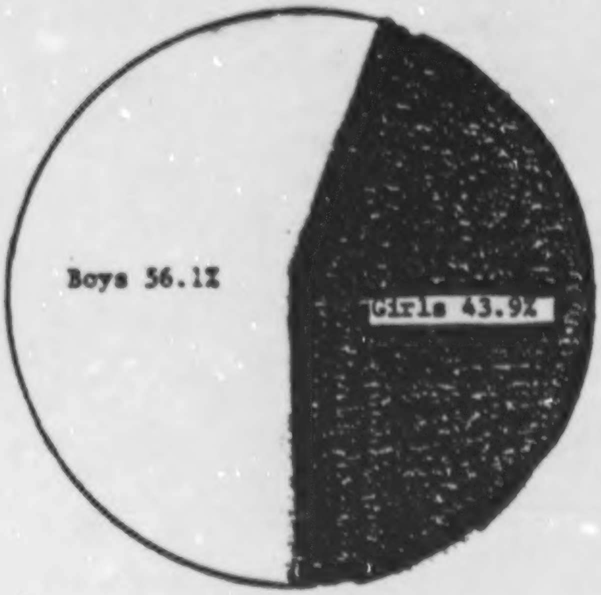
	BOYS Number of Participants	GIRLS Number of Participants
Rugby	42	—
Skiing (Downhill)	6,895	5,136
(Cross Country)	2,575	2,434
Soccer	149,376	41,119
Softball (Fast Pitch)	479	181,908
(Slow Pitch)	548	24,443
Swimming and Diving	90,941	86,353
Table Tennis	46	23
Tennis	130,046	119,889
Track and Field (Indoor)	33,275	15,464
(Outdoor)	507,791	377,995
Volleyball	11,732	297,786
Water Polo	26,869	282
Weight Lifting	7,199	385
Wrestling	245,029	—

SOURCE: NFSHSA, 1981 Sports Participation Survey.

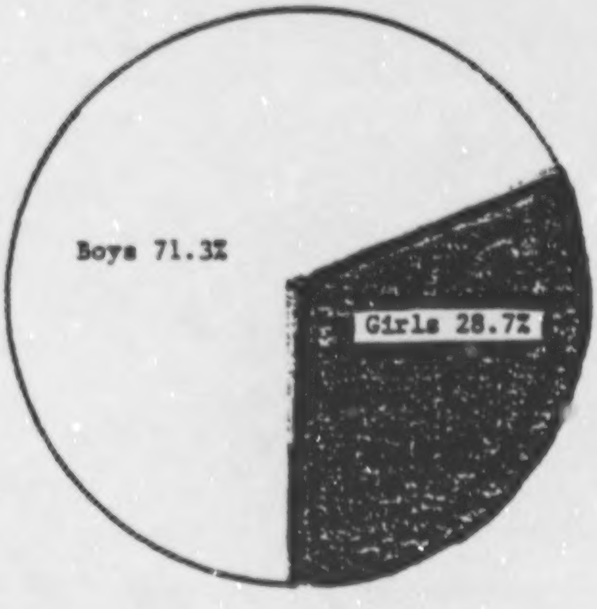
EXHIBIT V-3

PROPORTIONAL PARTICIPATION IN HIGH SCHOOL INTRAMURAL AND INTERSCHOLASTIC SPORTS, FOR BOYS AND GIRLS, 1975-76

Intramural Athletics



Interscholastic Athletics



SOURCE: NCES, "Athletic Injuries and Deaths in Secondary Schools and Colleges, 1975-76," 1978, Table 9.

Physical Education Programs

National participation data for 1980 high school physical education programs were obtained from OCR/DE, 1980. Enrollment in these programs included 4,999,834 males and 4,586,736 females. These totals represent participation rates of 52.2 and 47.8 per respectively. From this and earlier information, it can be seen that boys and girls participate in nearly equal proportions in physical education programs. Since such programs are usually a required activity, similar participation rates would be expected.

Physical Fitness Levels

Despite the relative dearth of nationally aggregated information concerning the extent and nature of physical fitness programs in the nation's schools, some data about actual levels of children's physical fitness were available. Specifically, funds provided by the Department of Education were utilized to collect data about the physical fitness status—as measured by the Youth Fitness Test—of schoolchildren and youth, ages 10 through 17, in the public schools of the coterminous United States in 1965 and 1975, which were compared with each other and with the original norm information collected in 1958. The most current national norms (1975) are included in the test manual (Revised 1976 Edition) of the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) Youth Fitness Test.

In all three national testing instances, the sample was selected via consultation with the University of Michigan's Survey Research Center—a well-respected organization. Area probability sampling techniques (in 1975, a four-stage cluster probability sample) were utilized; such techniques, as noted in Chapter II, generally provide a highly representative sample. However, it should be noted that only children attending public schools were included in the sampling frame, so the results are not necessarily generalizable to children attending private or parochial schools.

Given that the comparisons between collection dates and percentile norms for the tests included in the battery were compared as a function of both age and sex, complete comparisons will not be reproduced in this document. Instead, the major findings are reported below.

- For the period between 1958 and 1965, significant gains were found for boys for all tests (54 out of 56 comparisons). Similarly, significant improvements were noted for girls (39 out of 48 comparisons)
- In contrast, for the 1965-1975 comparisons, essentially no changes were detected for boys, with scattered gains noted for girls in the 600-yard run (for 13-15 and 17 year olds), the long jump (for 13 and 14 year olds) and the flexed-arm hang (for 14 year olds only).
- Girls showed little improvement in the endurance events (e.g., sit-ups, flexed-arm hang) as a function of age; 10 year olds performed about as well as 17 year olds.

One final caveat which should be noted, is relevant to the appropriateness of comparing the 1958 to the 1965 data. Specifically, since 1958 was the first time the test had been administered, and marked the formal start of the national incentive program, we should expect that mere familiarity with the tests could account for some of the performance gains demonstrated by the second national testing (1965). This is not to suggest that fitness status failed to improve over this period of time, merely to recognize the possible influence of instrumentation factors on this apparent improvement.

Trends in Sports and Physical Activity

Trend data have been obtained for 39 categories of interscholastic sports. In Exhibit V-4, the number of high school students participating in the 18 most often sponsored interscholastic sports is presented for three consecutive school years. Response rates for the three surveys are not available, but NFSHSA membership data indicate a 5.5 percent decline in the number of Federation member high schools between 1978 and 1980.

Participation data for years prior to the 1978-9 school year are not included because of inconsistencies in the data collection methodology. In those surveys, some junior high and Canadian schools were included, thereby precluding the potential for comparison of the older surveys with the more recent ones.

Even though high school enrollment declined 5.8 percent over this period, the 1979-1981 NFSHSA surveys show that the number of female participants increased in five of the 18 most popular sports, while decreasing in only two sports (see Exhibit V-4). Boys participation however, declined in eight of the 18, while increasing in only two. If the decline in the participation of boys can be attributed to the drop in overall school enrollment, the increases for girls would appear to be due to the efforts of the equal opportunity movements in the United States.

It is also useful to examine the trend in the number of schools sponsoring various interscholastic sports. For sports offered by at least 100 schools, the number of sponsors for most sports, as shown in Exhibit V-5, either increased absolutely between 1978 and 1980, or declined at less than the rate of NFSHSA membership decline and thus experienced a relative increase. Decreases were shown by boys' and girls' gymnastics, boys' volleyball, and girls' track and field. Sports with less than 100 sponsors all decreased in absolute or relative terms.

Soccer is the sport with the largest increase in sponsorship: 20.4 percent for boys and 67.1 percent for girls. Only two other sports—girls' cross country running and girls' volleyball—had increases in sponsorship that exceeded ten percent. Boys' gymnastics is the only sport which decreased by more than ten percent relative to membership.

From the above data, it would appear that, in general, growth continues in high school sports programs along traditional lines of development for boys and girls. However, programs offering sports to students of the sex for whom the sport is not commonly sponsored are becoming even less common. Overall, trend data indicate sponsorship is increasing. This bodes well for opportunities for students participation.

EXHIBIT V-4

NUMBER OF PARTICIPANTS IN THE 18 MOST POPULAR* INTERSCHOLASTIC SPORTS, 1978-79, 1979-80, 1980-81

SPORT	1980-81 School Year NUMBER OF PARTICIPANTS BOYS	GIRLS	1979-80 School Year NUMBER OF PARTICIPANTS BOYS	GIRLS	1978-79 School Year NUMBER OF PARTICIPANTS BOYS	GIRLS
BASEBALL	422,310	--	415,860	42	415,661	49
BASKETBALL	553,702	423,568	569,228	409,894	619,601	449,695
CROSS COUNTRY	172,270	90,224	163,094	82,124	170,126	59,005
FIELD HOCKEY	--	55,656	1,050	52,879	231	59,679
FOOTBALL (11 Person)	937,901	--	937,677	85	986,844	--
GOLF	118,390	32,828	117,273	32,903	117,668	23,933
GYMNASTICS	13,293	64,815	19,844	62,142	19,706	65,449
ICE HOCKEY	25,925	56	24,442	22	25,174	89
SOCCER	149,376	41,119	133,649	26,716	132,073	23,475
SOFTBALL (Fast Pitch)	479	181,908	728	159,329	811	161,962
SOFTBALL (Slow Pitch)	548	24,443	516	25,372	2,376	19,309
SWIMMING AND DIVING	90,941	86,853	84,204	68,585	95,718	81,433
TENNIS	130,045	119,889	131,290	124,171	156,376	142,773
TRACK AND FIELD (Indoor)	33,275	15,464	33,134	15,184	43,794	16,223
TRACK AND FIELD (Outdoor)	507,791	377,995	524,890	382,584	562,567	414,043
VOLLEYBALL	11,723	297,786	12,659	265,120	12,812	261,816
WATER POLO	26,869	282	10,168	390	10,027	365
WRESTLING	245,029	--	273,326	48	281,704	--

SOURCE: NFSHSA, Sports Participation Survey, 1979, 1980, 1981

*Sports with under 15,000 participants not included.

EXHIBIT V-5

NUMBER OF HIGH SCHOOLS OFFERING THE MOST OFTEN SPONSORED INTERSCHOLASTIC SPORTS, FOR BOYS AND GIRLS, 1978-79, 1979-80, 1980-81

	1978-79 No. of schools		1979-80 No. of schools		1980-81 No. of schools	
	Boys	Girls	Boys	Girls	Boys	Girls
Baseball	13,466	3	13,371	1	14,027	---
Basketball	16,978	15,290	17,175	16,040	18,041	16,595
Cross Country	9,902	5,134	9,654	6,095	9,952	6,938
Field Hockey	9	1,959	37	1,726	---	1,997
Football-11-man	13,631	---	13,660	2	14,179	---
Golf	9,593	2,690	9,825	3,237	9,602	3,048
Gymnastics	981	3,260	1,097	3,394	845	2,990
Soccer	3,783	803	3,879	1,052	4,555	1,671
Softball (Fast Pitch)	41	6,888	39	6,590	26	7,374
Swimming and Diving	3,820	3,516	3,828	3,197	3,757	3,583
Tennis	8,862	8,277	9,192	8,443	9,214	8,459
Track and Field (Outdoor)	14,623	13,222	14,853	13,319	14,618	12,365
Volleyball	720	10,524	759	10,464	671	11,952
Wrestling	8,683	---	8,751	3	8,512	---

SOURCE: NFSHSA, Sports Participation Survey, 1981, 1980, 1979.

COLLEGES

Information on physical activity participation and programs in colleges were obtained from three primary sources: the National Collegiate Athletic Association (NCAA--1956-7, 1961-2, 1966-7, 1971-2, and 1976-7),[7,8] the National Association of Collegiate Directors of Athletics (NACDA--1973-4, 1977-8),[9] and the National Center for Education Statistics (NCES--1975-6, 1976-7).[5] Some additional baseline data came from the U.S. Bureau of the Census (USBC--1976-7, 1978-9, 1979-80, 1980-81)[6] and the National Junior College Athletics Association (NJCAA--1978-79).[10] College exercise and sports programs and participation data described below are divided into intercollegiate sports, intramural sports, physical education programs, other sports and exercise activity, and trends in sports and physical activity.

The NCAA survey for the 1976-7 school year collected data on student participation by sex in four year colleges for a total of 57 exercise and sports activities. Exhibit V-6 presents student participation data for categories of intercollegiate sports, intramural sports, physical education activity, recreation clubs, and informal recreation.

Intercollegiate Sports

Examining the information on intercollegiate sports and exercise activity first, male student participation is found to be greatest in football, track and field, baseball, basketball, and soccer. For women students, basketball, volleyball, tennis, field hockey, and softball are the sports with the largest number of participants. From Exhibit V-6, it can be seen that participation in intercollegiate sports is consistently higher for men than for women. To a minor degree this is expected, since U.S. Bureau of the Census data indicate that women comprised 46 percent of total college enrollment in 1976-7. However, inspection of Exhibit V-7 reveals that for the five most popular sports, proportional participation varies by sport. Because of the sport-specific nature of the activity differences, broad gen-

EXHIBIT V-6

NUMBERS OF STUDENTS PARTICIPATING IN 57 PHYSICAL ACTIVITIES AND SPORTS, BY SEX, AT FOUR-YEAR COLLEGES AND UNIVERSITIES, 1976-77 (NCAA)

	Intercollegiate Sports		Intramural Sports		Physical Education Activity		Recreation Clubs		Informal Recreation	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Archery	---	107	4,710	2,850	16,421	15,195	443	277	11,145	6,597
Badminton	---	605	24,694	15,662	27,994	26,808	614	459	20,869	16,862
Baseball	19,113	135	2,372	271	1,953	621	---	---	2,972	172
Basketball	14,683	10,859	493,349	91,541	25,380	13,337	255	460	620,176	147,129
Bicycling	---	---	1,757	389	2,894	2,802	838	290	20,913	9,464
Billiards	---	---	11,716	2,586	5,327	2,347	---	---	148,399	34,198
Bowling	272	271	39,750	15,103	40,089	33,788	2,174	974	143,345	114,308
Boxing	---	---	959	---	55,455	113	518	12	140	---
Cageball	---	---	802	237	---	---	---	---	---	---
Canoeing	---	---	320	119	2,148	1,976	920	536	14,544	7,285
Chess	---	---	1,283	394	---	---	525	53	3,738	1,619
Crew	2,731	986	1,306	418	2,252	355	1,361	644	---	---
Cricket	---	---	---	---	---	---	196	---	---	---
Cross-Country	8,810	1,653	17,793	1,087	1,762	1,248	267	354	27,555	13,017
Dance	---	---	---	---	2,499	3,535	---	---	---	---
Fencing	1,416	899	1,063	427	11,574	8,448	2,283	784	1,959	642
Field Hockey	---	6,847	1,054	1,310	709	5,240	68	464	20	685
Football Skills	---	---	1,214	168	3,709	555	---	---	1,532	5
Football, Tackle	41,551	---	3,167	---	584	---	2,699	---	---	---
Football, Touch	---	---	360,075	58,929	7,397	1,575	---	---	71,978	10,629
Free Throw	---	---	23,256	4,707	---	---	---	---	15,067	1,967
Golf	6,713	1,069	22,325	2,637	34,790	20,364	149	119	41,570	19,102
Gymnastics	1,765	2,722	871	1,007	19,194	15,321	869	555	16,424	17,339
Handball	---	---	21,111	1,173	17,942	5,512	914	128	93,319	10,531
Horsemanship	---	---	---	---	3,208	4,189	450	474	606	431

EXHIBIT V-6 (continued)

	Intercollegiate Sports		Intramural Sports		Physical Education Activity		Recreation Clubs		Informal Recreation	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Horseshoes	---	---	11,284	1,376	279	303	---	---	2,829	583
Ice Hockey	3,303	---	24,719	2,326	1,134	265	4,361	131	7,999	713
Judo-Karate	---	---	2,139	599	19,361	7,004	9,667	2,480	14,329	9,909
Lacrosse	4,919	2,539	4,776	43	3,270	1,039	3,179	444	3,985	873
One-On-One	---	---	1,915	48	---	---	---	---	---	---
Paddleball	---	---	25,438	8,048	17,810	8,603	967	503	95,609	40,792
Pistol	213	---	---	---	338	139	189	94	90	35
Racquetball	---	---	8,838	3,006	4,780	2,570	374	53	62,472	16,164
Rifle	1,021	75	3,805	426	5,146	1,882	1,208	121	4,909	526
Rugby	381	---	489	15	2,167	75	8,998	782	4,545	12
Sailing	1,272	296	1,040	210	3,793	1,703	5,251	1,626	10,565	5,055
Self-Defense	---	---	---	---	550	825	---	---	---	---
Shuffleboard	---	---	1,171	1,319	764	776	---	---	2,072	905
Skiing	1,173	520	2,326	333	12,288	8,734	5,149	3,113	19,776	11,368
Skin Diving	---	---	---	---	6,530	3,848	952	236	3,495	1,504
Soccer	13,458	---	88,057	9,617	13,476	4,166	5,088	947	23,517	2,974
Softball	110	6,310	351,908	129,159	11,806	8,098	2,547	1,262	98,979	33,011
Speedball	---	---	349	145	745	1,607	---	---	2,030	573
Squash	462	199	6,679	1,141	6,452	1,816	313	34	14,580	3,923
Swimming	8,830	5,969	42,293	18,589	64,840	44,216	531	680	457,343	248,979
Synchronized swim	---	---	---	---	---	---	---	441	---	---
Table Tennis	---	---	32,673	9,894	4,767	1,507	1,537	251	94,930	36,667
Tennis	7,635	7,127	67,301	26,873	79,620	66,468	727	469	272,237	166,412
Track/Track & Field	20,063	5,831	53,178	10,415	10,439	4,285	720	803	24,255	10,712
Turkey Trot	---	---	5,617	1,856	---	---	---	---	---	---

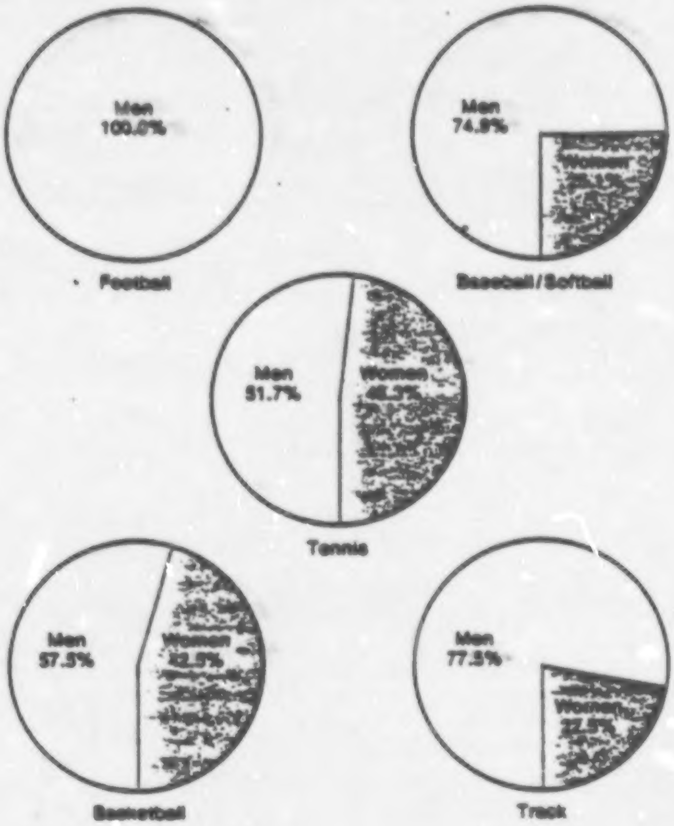
EXHIBIT V-6 (continued)

	Intercollegiate Sports		Intramural Sports		Physical Education Activity		Recreation Clubs		Informal Recreation	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Volleyball	803	9,356	209,860	129,124	38,853	29,115	2,708	1,605	58,516	34,976
Water Basketball	---	---	4,260	1,770	---	---	---	---	1,754	586
Water Polo	975	---	23,078	11,875	4,071	812	1,629	432	3,224	634
Water Skiing	---	---	---	---	---	---	281	214	---	---
Weight Lifting	---	---	6,380	171	29,541	4,425	1,677	50	145,127	17,816
Wrestling	8,712	---	25,627	76	11,669	356	630	31	7,631	---
Others	---	---	27,020	7,179	15,472	13,902	4,334	2,156	37,902	19,393
TOTALS	170,384	64,375	2,067,167	576,648	603,242	381,868	78,540	25,541	2,730,234	1,077,057

SOURCE: NCAA, The Sports and Recreational Programs of the Nation's Universities and Colleges, Report No. 5, March 1978.

EXHIBIT V-7

PROPORTIONS OF MEN AND WOMEN PARTICIPATING IN THE FIVE MOST POPULAR INTERCOLLEGIATE SPORTS AT NCAA COLLEGES, 1976-77



SOURCE: National Collegiate Athletic Association, The Sports and Recreational Programs of the Nation's Universities and Colleges, Report Number Five, Corrected Copy, tables 1 and 3.

eralizations about men's and women's participation in sports and exercise are difficult to make. Football is solely a male sport. Baseball/softball and track are dominated by men while tennis and basketball participation rates are roughly equal between the sexes. Furthermore, these male-female participation differences are also confounded by the factor of sponsorship.

Thus, it is also of interest to examine the percent of colleges sponsoring the most frequently offered intercollegiate sports. Exhibit V-8 shows that sponsorship, like participation, is higher for mens' than womens' sports. Looking at specific sports, we see that mens' basketball is the only sport offered by almost all (99%) of the NCAA colleges and universities. Moreover, mens' football, which has the largest number of participants, ranks only tenth with 66 percent sponsorship. In addition, it is clear that sponsorship rates for womens' sports are lower than for mens' sports. In fact, six of the nine womens' sports have sponsorship rates of less than 50 percent. The lower rates of sponsorship imply fewer opportunities for participation by women in some sports, and thus lower participation rates (as was noted in the preceding paragraph). In contrast, sponsorship rates for ten of the eleven mens' sports are greater than 50 percent.

Information on intercollegiate sports in two-year colleges comes from two sources, the National Junior College Athletic Association (NJCAA) and the National Center for Education Statistics (NCES). The former source provides information on the number of two-year colleges sponsoring various intercollegiate sports as shown below in Exhibit V-9. Basketball, baseball/softball and tennis are the most frequently offered sports for both men and women. However, as was the case with four year colleges, availability is lower for all three of these sports for women than for men. Specifically, 776 junior colleges offered intercollegiate sports for men as opposed to only 562 for women, a difference of 27.6 percent. Furthermore, the NJCAA sanctions 20 intercollegiate sports for men, but only 13 for women.

EXHIBIT V-8

NUMBER AND PERCENT OF NCAA COLLEGES SPONSORING THE TWENTY MOST OFFERED INTERCOLLEGIATE SPORTS FOR MEN AND WOMEN, 1976-77

	NUMBER OF INSTITUTIONS	PERCENT OF ALL NCAA INSTITUTIONS
1. Men's basketball	715	99
2. Men's tennis	655	91
3. Men's baseball	654	91
4. Women's basketball	649	90
5. Men's golf	620	86
6. Women's tennis	582	81
7. Men's cross country	576	80
8. Women's volleyball	544	75
9. Men's track and field	533	74
10. Men's football	475	66
11. Men's soccer	435	60
12. Men's swimming	394	55
13. Men's wrestling	379	52
14. Women's swimming	338	47
15. Women's softball	317	44
16. Women's track	314	43
17. Women's field hockey	290	40
18. Women's gymnastics	203	28
19. Women's cross-country	176	24
20. Men's lacrosse	143	20

SOURCE: NCAA, The Sports and Recreational Programs of the Nation's Universities and Colleges, Report No. 5, March 1978.

EXHIBIT V-9

NUMBER OF TWO-YEAR COLLEGES OFFERING INTERCOLLEGIATE ATHLETICS TO MEN AND WOMEN, 1977-78

Sport	Number of Colleges	
	Men	Women
Baseball	379	0
Basketball	535	367
Bowling	43	39
Cross Country Running	155	37
Fencing	1	4
Field Hockey	0	33
Football	97	0
Golf	355	45
Gymnastics	12	24
Ice Hockey	23	0
Judo	7	0
Lacrosse	16	0
Rifle	5	0
Skiing	16	11
Soccer	126	0
Softball	0	204
Swimming	43	27
Tennis	369	244
Track and Field, Outdoor	174	70
Track and Field, Indoor	74	0
Volleyball	16	262
Wrestling	145	0

NJCAA, "Sports Participation Survey," *1978-79 Hand-book and Casebook*, 1978.

The proportion of men and women participating in intercollegiate and intramural athletics in two-year colleges comes from NCES. Exhibit V-10 indicates that 24.3% of the participants in intercollegiate sports are women and 75.7% are men. The proportion of women participating in intercollegiate sports is slightly less than for intramural sports (29.4%). In addition, the junior college proportion is slightly less than the proportion for four-year colleges (27.4%).

Intramural Sports

While intercollegiate athletics have the highest visibility outside colleges and universities, intramural athletics along with informal recreation are the most significant forms of student participation in exercise and sports. Referring back to Exhibit V-6, participation in intramural activities is tenfold greater than participation in intercollegiate athletics. Intramural sports ranking high for men include basketball, touch football, softball and volleyball. For women students, the most popular sports are softball, volleyball, basketball, and touch football. Thus, overlap between the sexes exists for the four most popular intramural sports.

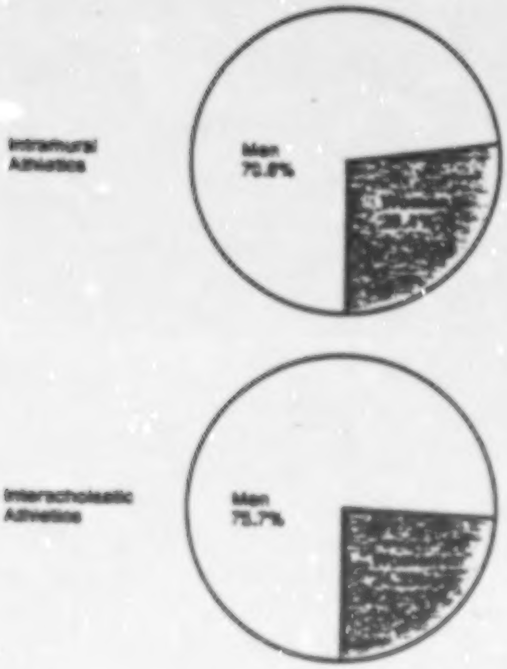
However, once again, participation by women is found to be at significantly lower levels than for men. As shown in Exhibit V-11, NCAA data indicate that participation in intramural sports by college women is consistently lower than their relative proportion of the college student population (46%). On average for the ten intramural sports shown in this exhibit, women account for only 25 percent of the participation.

Physical Education Programs

Information from the NCAA, as portrayed in Exhibit V-12, reveals the extent of required physical education programs in four-year colleges. Of the reporting institutions, one year of physical education was required in 1976-77 for 46.1 percent of the men and for 47.1 percent of the women. For the same period,

EXHIBIT V-10

PROPORTION OF MEN AND WOMEN PARTICIPATING IN INTRAMURAL AND INTERSCHOLASTIC ATHLETICS AT TWO-YEAR COLLEGES, 1975-76



SOURCE: National Center for Education Statistics, "Athletic Injuries and Deaths in Secondary Schools and Colleges, 1975-76," 1978, table 9.

EXHIBIT V-11

NUMBER AND PERCENT OF MEN AND WOMEN PARTICIPATING IN THE 10 MOST POPULAR INTRAMURAL SPORTS AT NCAA COLLEGES, 1976-77

	Men		Women		Total	
Sport	**No.**	**Percent**	**No.**	**Percent**	**No.**	**Percent**
Basketball	493,349	84.3%	91,541	15.7%	584,890	100.0%
Softball	351,908	73.2%	129,159	26.8%	481,067	100.0%
Football, Touch	360,075	85.9%	58,929	14.1%	419,004	100.0%
Volleyball	209,880	61.9%	129,124	38.1%	338,894	100.0%
Soccer	88,057	90.2%	9,617	9.8%	97,674	100.0%
Tennis	67,301	71.5%	26,873	28.5%	94,174	100.0%
Track and Field	53,178	83.6%	10,415	16.4%	63,539	100.0%
Swimming	42,293	69.5%	18,589	30.5%	60,882	100.0%
Bowling	39,750	72.5%	15,103	27.5%	54,853	100.0%
Badminton	24,694	61.2%	15,662	38.8%	40,356	100.0%

SOURCE: National Collegiate Athletic Association, The Sports and Recreational Programs of the Nation's Universities and Colleges, Report Number Five, Corrected Copy, 1978, table 4.

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EXHIBIT V-12

NUMBER OF NCAA COLLEGES WITH REQUIRED PHYSICAL EDUCATION, BY NUMBER OF YEARS REQUIRED, FOR MEN AND WOMEN, 1971-72 and 1976-77

ears equired	Total Institutions	Total Participants Men	Total Institutions	Total Participants Women
76-77				
year	179	138,070	178	104,443
years	131	98,860	125	83,303
years	1	850	---	---
years	10	10,462	10	2,222
ther	67	31,951	65	27,288
one or Unreported	334	---	344	---
Totals	722	280,193	722	217,256
971-72				
year	155	96,396	150	113,581
years	182	153,481	166	168,009
years	11	5,421	10	3,536
years	24	23,549	17	4,720
ther	32	22,675	27	15,214
one or Unreported	259	---	293	---
Totals	663	301,522	663	305,060

SOURCE: NCAA, The Sports and Recreational Programs of the Nation's Universities and Colleges, Report No. 5, 1978.

two years of physical education were required for men in 33.8 percent of the colleges. The comparable figure for women was 33.1 percent. Thus, physical education was required almost equally for men and women.

Physical education program data from Exhibit V-6 indicate a total of almost a million cases of individual participation, of which roughly 60 percent are men. Given relatively equal requirements for physical education, this implies that men choose to take physical education classes on a voluntary basis a little more often than women. The five most common physical education activities for men are tennis, swimming, boxing, bowling and volleyball; for women, they are tennis, swimming, bowling, volleyball, and badminton.

Other Physical Activity and Exercise Participation

In addition to the forms of physical activity and exercise described earlier, NCAA information on participation in recreation clubs and informal recreation is available. In looking at data presented in Exhibit V-6, it can be seen that informal recreation boasted more participants than any other form of physical activity. More than 3.8 million college students were involved in informal recreation, with the most popular sports and exercises for both sexes being basketball, swimming, tennis and bowling. Compared to intramural sports—the next most common form of participation—informal recreation had 40 percent more participants. The significance of this finding is that unorganized, voluntary participation represented the major means by which college students got exercise in 1976-7.

In contrast, recreation clubs accounted for the least participation of any of the generic forms of physical activity and exercise. Only 100,000 students were involved in these clubs. Activities which had 6,000 participants or more included judo-karate, rugby, skiing, soccer and sailing, indicating that this kind of format was most often utilized in the pursuit of relatively uncommon forms of physical recreation. As was the case for other activities, participation by women fell below that of men, both in absolute and relative terms.

Facilities for Sports and Physical Activity

Information available from NCAA affiliates describes the total number of indoor and outdoor sports and recreation facilities at NCAA colleges. Indicated in Exhibit V-13 are the number of facilities and number of colleges which provided facilities for 12 indoor and 19 outdoor physical activities in 1976-77.

The most common indoor facilities were basketball courts, bowling lanes and handball courts; for outdoor facilities, basketball courts, football fields and softball diamonds were the most common. Five of the 12 indoor facilities and seven of the 19 outdoor facilities were provided by a majority of NCAA colleges.

Trends in Sports and Physical Activity

Information on trends in college student participation is presented below for the categories of intercollegiate sports, intramural sports, physical education programs, and facilities.

Intercollegiate Sports. Between 1960 and 1976, the number of four-year colleges increased 23 percent, and the number of male students enrolled in college increased 126 percent for the U.S. as a whole (USBC, Statistical Abstract for the U.S., 1981). Taking this growth into account, Exhibit V-14 reveals that, of the ten most frequently offered men's intercollegiate sports, participation in soccer alone kept pace with national enrollment trends from 1956-7 through 1976-7. This was true even as the increase in the number of the colleges reported by NCAA as offering these sports--relative to the national growth in numbers of four-year colleges--was suggesting a significant expansion of these sports programs during this twenty year period.

EXHIBIT V-13

NUMBER OF NCAA COLLEGES PROVIDING 32 TYPES OF SPORTS AND PHYSICAL ACTIVITY FACILITIES AND NUMBER OF FACILITY UNITS, 1976-77

INDOOR	1976-77 Number Institutions	1976-77 Number Units
Archery Ranges	149	281
Baskeaball Courts	642	2,964
Bowling Lanes	201	1,564
Golf Driving Ranges	113	207
Gymnasiums-Field Houses	589	965
Handball Courts	374	1,473
Ice Rinks	85	110
Rifle Ranges	153	193
Roller Rinks	12	12
Running Tracks	234	266
Swimming Pools	477	682
Tennis Courts	233	889
Wrestling Rooms	433	466

OUTDOOR	1976-77 Number Institutions	1976-77 Number Units
Archery Ranges	235	410
Baseball Diamonds	561	689
Basketball Courts	326	1,160
Camping Areas	79	122
Football Practice-Fields	470	1,079
Football Stadiums	419	422
Golf Courses	121	128
Golf Driving Ranges	134	141
Golf Greens	108	588
Ice Rinks	37	41
Lakes	99	167
Play Areas	233	741
Ski Slides	69	79
Soccer Fields	517	789
Softball Diamonds	471	2,001
Swimming Pools	133	224
Tennis Courts	640	7,799
Tracks	466	507
Trapshooting	30	30

SOURCE: NCAA, The Sports and Recreational Programs of the Nation's Universities and Colleges, Report No. 5, March 1978.

THE Granville CORPORATION

EXHIBIT V-14

MEN'S PARTICIPATION IN TEN INTERCOLLEGIATE SPORTS, RANKED BY NUMBER OF NCAA COLLEGES OFFERING, 1956-57, 1961-52, 1966-67, 1971-72, 1976-77

		1957	1962	1967	1972	1977
BASKETBALL	participants	14,477	15,125	15,247	16,760	14,683
	schools	457	536	575	658	715
TENNIS	participants	6,062	6,936	7,155	7,445	7,635
	schools	433	510	515	608	655
BASEBALL	participants	16,378	16,798	17,101	19,487	19,113
	schools	431	497	527	616	654
GOLF	participants	4,786	5,440	6,160	6,795	6,713
	schools	399	465	466	604	620
CROSS COUNTRY	participants	4,828	6,047	6,281	9,194	8,810
	schools	284	371	428	556	576
TRACK AND FIELD	participants	16,441	18,180	18,967	19,190	20,063
	schools	401	471	484	535	533
FOOTBALL	participants	28,032	30,519	36,799	42,187	41,551
	schools	384	410	447	465	475
SOCCER	participants	6,120	8,270	10,370	12,024	13,458
	schools	153	220	277	351	435
SWIMMING	participants	6,524	7,913	8,269	8,667	8,830
	schools	233	292	312	382	394
WRESTLING	participants	5,720	7,630	7,889	9,437	8,712
	schools	220	289	332	393	379

SOURCE: NCAA, The Sports and Recreational Programs of the Nation's Universities and Colleges, Report No. 5, 1978.

Next, it is notable that the 1972-77 period saw the first real decline in participation for some of the most frequently offered intercollegiate sports since the NCAA began record-keeping in 1957. Six of the top ten sports lost participants during that period, even as the number of schools offering five of these six continued to increase.

Trend data were obtained for two-year and four-year colleges regarding the average number of intercollegiate sports offered per college and are shown in Exhibit V-15.

EXHIBIT V-15

MEAN NUMBER OF INTERCOLLEGIATE SPORTS OFFERED BY TWO- AND FOUR-YEAR COLLEGES, FOR MEN AND WOMEN, 1973-74, 1977-78, 1978-79.

	1973-74		1977-78		1978-79	
	Men	**Women**	**Men**	**Women**	**Men**	**Women**
Four-year colleges	7.3	2.5	7.5	4.7	7.4	5.0
Two-year colleges	4.8	0.9	N/A	N/A	5.0	2.9

Source: NACDA, *Directory of College Athletics*, 1973-4, 1977-8, 1978-9.

These data suggest that two- and four-year colleges have significantly increased the number of intercollegiate sports available to women between 1973 and 1978, while the number of sports sponsored for men has remained about the same. However, the opportunity for participation was less for both sexes at two-year than at four-year colleges, though men at two-year colleges also have greater choice than women.

Intramural Sports. Both men and women have increased their participation in intramural sports. As shown in Exhibit V-16, overall intramural participation has increased by 83.7 percent between 1966-7 and 1976-7; broken down by sex, there was a 62.3 percent increase for men and a 249.3 percent increase for women. The higher rate of growth for women resulted in their proportion of the total amount of participation increasing from 11.2 percent in 1966-7 to 21.8 percent in 1976-7.

Physical Education Programs. Exhibit V-12 (presented earlier) illustrated a shift from 1971 to 1976 toward requiring fewer years of physical education. In the 1976 survey, one-year programs replaced two-year programs as the most common requirement and accounted for almost half of all physical education programs. Moreover, between 1971 and 1976, the number of one- and two-year required programs declined by 8.0 percent for men and by 4.1 percent for women.

Facilities. From 1971 to 1976, the indoor facilities growing fastest in numbers were basketball courts, archery ranges, ice rinks, and tennis courts. The fastest growing outdoor facilities during that period were basketball courts, camping areas, lakes, ski slides, swimming pools, tennis courts, and trap-shooting. Indoor facilities which decreased in number between 1971 and 1976 were bowling lanes, handball courts, and rifle ranges. Four outdoor facilities--baseball diamonds, golf driving ranges, golf greens, and ice rinks decreased in numbers. These decreases occurred despite a nine percent increase in the number of NCAA colleges.

SUMMARY

A partial picture of student physical activity in the nation's high schools and colleges emerges from the preceding data presentation. Participation by students takes place in a wide range of school-sponsored physical activities in both high schools and colleges. Men and boys continue to greatly outnumber

EXHIBIT V-16

INTERCOLLEGIATE AND INTRAMURAL PARTICIPATION
BY MEN AND WOMEN AT NCAA INSTITUTIONS
1966,67, 1971-72, 1976-77

		Intercollegiate			Intramural		
Academic Year		**Men**	**Women**	**Total**	**Men**	**Women**	**Total**
1966-67	Number	154,179	15,727	169,906	1,273,908	165,081	1,438,989
	Percent	87.5%	12.5%	100.0%	88.8%	11.2%	100.0%
1971-72	Number	172,447	31,852	204,299	1,676,995	276,167	1,953,162
	Percent	84.4%	15.6%	100.0%	85.9%	14.1%	100.0%
PERCENT CHANGE		+11.8%	+102.5%	+20.2%	+31.6%	+67.3%	+35.7%
1976-77	Number	170,384	64,375	234,759	2,067,167	576,648	2,643,815
	Percent	72.6%	27.4%	100.0%	78.2%	21.8%	100.0%
OVERALL PERCENT CHANGE		+10.5%	+309.3%	+38.2%	+62.3%	+249.3%	+83.7%

SOURCE: Comments of the National Collegiate Athletic Association on the Proposed Policy Interpretation of the Department of Health, Education and Welfare Regarding Application to its Title IX Regulation to Intercollegiate Athletics, p. 11.

women and girls in participation for similar activities. However, female participation continues to expand at a faster rate than that for boys in high school interscholastic sports, as well as in college interscholastic and intramural sports. In general, equal participation is more nearly the case in intramural than in interscholastic sports. Trends for men in intercollegiate sports indicate that in the mid-1970s, participation was down for the first time in 20 years when measured against men's college enrollment. However, the data also indicate that intercollegiate sports attract only a small proportion of all college level physical activity participation; intramural sports and informal recreation account for a much larger portion of overall participation.

High school and college sports programs generally continue to expand, with the number of schools offering the most widely sponsored interscholastic sports for men and women increasing in the late 1970s. Two-year colleges consistently offer fewer activities than do four-year colleges. While women still have a more limited choice of activities than do men, the gap between the sexes is narrowing. Finally, required college physical education programs are becoming less prevalent, and the length of the requirement is decreasing, with more students having mandatory participation for one year by the late 1970s than any other length requirement.

Data for elementary schools, similar to the physical activity information reported for high schools and colleges, was sought as desirable information. However, an appropriate source was not found. The nature of physical education programs for students in these lower grades is especially important to examine because it is in these years that many students receive their first exposure to, and school instruction in, sports and physical activities, and also when students are more likely to be required to participate during their full tenure at the school.

In conclusion, important data about student physical activities and school physical education programs have not been found for elementary and secondary schools in the body of information examined in preparing this report. Further, information concerning measures of physical fitness for students has been almost completely missing at all school levels with the exception of the norms for the Youth Fitness Test. In general, aside from college data, little sports and physical activity participation data have become available. School sports and exercise programs information is limited in main to head counts of institutions by activity, with little information at hand to describe the nature and level of school resources committed to these programs. Furthermore, all of the participation information is in the form of instances of individual participation by type of activity; unduplicated counts of the number of individuals would be desirable data to have.

Programs of physical education, an important means of fostering exercise and physical fitness for students at all levels, remain undescribed in most of the identified sources of data. This information is perhaps most needed in assessing physical activity at the elementary school level, where the student first comes into contact with many aspects of such activities. For these schools, the picture remains indistinct not only for physical education programs, but for all significant elements of elementary school fitness programs.

However, Granville currently is working with ODPHP to develop physical fitness and exercise instruments that can be used to measure the physical activity patterns and fitness status of schoolchildren and youth ages 10 through 17. These instruments will be used in an upcoming, large-scale ODPHP evaluation project of elementary and secondary school students starting in late 1982 and extending for one year.

VI. CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

The purpose of this study has been to conduct a secondary analysis of existing data sources on physical fitness, leisure time physical activity, sports and exercise participation and programs of the general population, employees and school students. The aim has been to collect the best possible baseline data on these topics as a means of enhancing ODPHP's ability to direct its national prevention strategy in a manner consistent with achieving the physical fitness and exercise goals set forth in Promoting Health/Preventing Disease--Objectives for the Nation.

Whereas Chapters III through V provide descriptions, analyses and summaries of actual data for the three target groups, this chapter presents a broader overview on the overall availability and usefulness of the data on physical fitness and exercise. For each of the three groups, findings about data collection approaches, information gaps, and survey/study deficiencies are described. Recommendations for each of the three areas then follow.

GENERAL POPULATION

The best available information on physical activity behaviors and attitudes comes from surveys on the general population. A number of different surveys identified in Chapter II and described in Chapter III collected information on representative samples of the United States population. Overall, these surveys provide a broad range of recent information on the physical activity patterns of the American populace. Moreover, most of the findings are generally consistent, once differences in methodology and question construction are understood. Nonetheless, there are instances in which data from different surveys are divergent, and further or improved data collection is needed to clarify several aspects of physical activity behavior or perceptions.

Because of the number of national surveys and their various emphases, a great deal of data has been collected on the physical activity behaviors and attitudes of the general population. Many topics of interest have been addressed by one survey or another. However, since all or even most of the information is not found in any one survey, some desirable analyses and cross tabulations cannot be done. Thus, while a great number of topics have been investigated, the value of available information is lessened.

In addition, there are gaps in the data on physical fitness and physical activity. The most obvious information gap exists with regard to a description of the physical fitness status of the general population in terms of endurance, strength and flexibility. However, this is not surprising given the time, effort and cost that would be involved in the collection of that data. Despite these barriers, the government of Canada has recently conducted a large and comprehensive study of physical fitness and activity. Over 20,000 individuals were queried about their physical activity patterns, and more than 15,000 persons were tested for fitness. Preliminary results are described in Appendix B. Thus, in this regard, Canada is one step ahead of the United States.

In addition to the lack of information on physical fitness, the surveys generally did not inquire about physical activity at work or during non-leisure time, e.g., chores around the house. Thus, potentially significant aspects of the physical activity patterns of survey respondents were neglected.

Despite the focus on leisure time physical activities by the general population surveys, some information remains lacking. Specifically, none of the surveys asked about intermittent exercise involvement, extent and importance of one or more partners in exercise participation, perceptions of the need for exercise, perceptions about what exercise is, and attitudes about the relationship between exercise and better health status. This information too would be useful in providing a fuller understanding of exercise and sports participation.

As portrayed in Chapter II, analysis was not hindered by limitations related to survey sampling design or data collection procedures since the general population surveys used sound statistical techniques. However, questions about the reliability and validity of data on individual questions did arise for several of the surveys.

The deficiencies, as opposed to gaps, in the available national survey data, are general and conceptual in nature. Five such problems have been identified and are discussed below.

1) Seasonal aspect of sports--In the cases of many sports, participation does not continue throughout the year. Rather, involvement in the sports spans one, two, or in a few cases three seasons of the year. For example, swimming and water skiing participation is limited to the summer months in most parts of the country. Likewise, snow skiing and ice skating are generally restricted to the winter months. Other sports, such as bowling, are not limited to any particular season.

    This seasonal aspect of sports participation creates a problem for survey design in that it may be difficult to obtain a reliable estimate of sports participation due to poor recall by some interviewees.

    Three techniques have been used, sometimes in combination, to address this problem. First, some surveys asked about participation during the past year. Second, some surveys prompted respondents with a list of activities. Third, Fitness Ontario and some of the states conducted surveys at more than one time during the year. This third technique is also to be used in an upcoming National Park Service survey. Yet another possible means to reduce recall problems which has not been used in any large-scale studies would be to have survey respondents keep a diary of their leisure time physical activities.

The seasonal aspect also is relevant to the regular exercise issue (discussed below) since exercise may be regular during one season and not in another season.

2) Regular exercise--In a number of the surveys, especially the national ones, questions about "regular" exercise were asked without defining the term. Thus, survey respondents needed to make their own individual decision about what constituted regular exercise. This means that some respondents may have deemed monthly exercise as regular while others defined weekly exercise as regular. This lack of definition most likely had an effect on both the variability of responses within each survey as well as the comparability of responses between surveys. As already mentioned, variations in proportions of the samples reporting regular exercise were likely to have been different as a result of varied definitions of regularity.

The Perrier survey avoided this problem by not asking about regular exercise at all. Instead, it asked about activity frequency and duration for a set of prompted exercises and sports.

3) Beneficial versus less beneficial exercises--One of the considerations associated with exercise as a contributor to physical fitness is that some exercises produce much greater physical benefits than others. Thus, it is helpful for surveys to identify not only specific activity participation, but also to collect information on the frequency, duration and intensity of that participation. Further, it is also useful to realize that physical fitness is generally considered to be composed of cardiorespiratory endurance, strength, and flexibility. Again, some exercises will produce much greater benefits than others for specific aspects of physical fitness.

When the duration, frequency and intensity of specific activity participation are known, the relative effect of exercise and sports on physical fitness can be better estimated. Some activities contribute to the development of an individual's overall physical fitness status. Running and swimming are two highly beneficial activities. On the other hand, baseball, golf and bowling do little to maintain or promote cardiorespiratory physical fitness; although, as a form of recreation, they may promote psychological well-being.

Of all the surveys, only Perrier collected data on duration and frequency of exercise. Using estimates of intensity, conversions of the activity participation statistics were then made by use of caloric expenditure factors. High, moderate, low and non-active categories of caloric expenditure were developed. Thus, while the information was collected in a more desirable form, it was not reported in a manner that allows future comparisons on an exercise-by-exercise basis. Also, some precision is lost in applying average caloric expenditure figures for estimated levels of intensity, for men and women and for different body types.

4) Inconsistent demographic disaggregations--One of the problems encountered in the analysis was the use of inconsistent classifications of the demographic characteristics. For example, no two of the surveys presented age breakdowns using the same age groupings. While the general trend of decreasing participation in exercise with increasing age can be seen from all the surveys, inconsistent demographic disaggregations hindered more specific analyses and conclusions regarding exercise participation for any specific age group. Other demographic variables suffered from this same deficiency.

5) Prompted versus non-prompted responses--Another factor which limited the comparability of data among the surveys was the use of prompted response in some surveys but not others. In general, when a subject area has not been previously researched, open-ended questions (i.e., questions which do not have a priori specified responses) are preferred; this contributes to an understanding of the full range of responses which a sample may provide.

However, after the more exploratory phases, prompted responses are preferred as a survey technique for several reasons. First, the use of closed-ended questions (i.e., prompted responses) is more likely to tap the dimension of importance. In contrast, open-ended questions are more likely to provide salient answers, i.e., responses which come to mind the quickest, but are not necessarily the most important on close consideration.

Second, comparability is facilitated by closed-ended questions because responses fall into consistent predesignated categories. A

> related concern revolves around the subjective nature of the content analysis which is performed when open-ended responses are coded for summary/analysis. Although agreement about what categories to code the individual responses into may be reached, different codes may not utilize the categories consistently for the same responses, much less for responses collected at a subsequent time.
>
> Third, the use of prompted responses is desirable in terms of cost and error reduction. When using open-ended questions, a lot of time and money is spend on defining, classifying, and grouping a divergent set of responses. This is avoided with closed-ended questions. In terms of errors, open-ended questions can have two common types of errors: coding of responses and key punching. Since responses to close-ended questions fall into predesignated categories, post hoc coding is not necessary. Thus, one common type of error is avoided.

This discussion of deficiencies was not designed to be overly critical of the approaches and techniques used in national surveys of the general population. Most of the organizations conducting the surveys obviously put a lot of thought into methodology and questionnaire construction. Furthermore, their results have produced useful knowledge on physical activity patterns and associated attitudes.

However, having reached the current level of understanding, Granville has sought to be critical of the national surveys in order to provide some perspective on the improvements which can be made in the design of future surveys. The adoption of changes relative to the five identified shortfalls will allow future surveys to provide more solid data for ODPHP and others to develop policy in the pursuit of the physical fitness and exercise goals identified in Promoting Health/Preventing Disease--Objectives for the Nation.

In contrast to the national data, the available state surveys typically provided little reliable information on physical fitness activities within their borders. Both the Centers for Disease Control Health Education-Risk Reduction surveys and recreational surveys conducted at the state level tended to suffer from problems related to less than adequate sampling procedures, poor questionnaire construction, or limited data collection. Furthermore, comparisons among the state surveys for the purpose of identifying regional characteristics were precluded because of differences in methodology, sample population, the lack of commonality of questions and their wording, answer categories, and question sequence. Finally, the state recreational surveys tended to restrict their investigations to outdoor activities, thereby further limiting their value to this study. The result is that useful information on state level physical activity patterns is very limited. Because of the problems associated with the state surveys, analyses similar to those conducted for the national data were not performed.

Recommendations on General Population Surveys

Ideally, ODPHP would be able to conduct an assessment of the physical fitness status of a sample of the U.S. population as the means of establishing baseline or trend data for its physical fitness and exercise objectives. However, the level of effort and cost may be prohibitive. The alternative is to use a questionnaire to determine the physical activity patterns and attitudes of the general population. A comprehensive questionnaire instrument would include questions regarding level of physical activity at work, in daily maintenance activities (e.g., going to and from work, chores around the house, etc.), and leisure time activities.

Having spent a number of months collecting and analyzing physical activity surveys, Granville has developed some definite opinions as to how a questionnaire on leisure time physical activities should be constructed. In Exhibit VI-1, (starting on page 193), a proposed physical fitness survey instrument and associated technical notes are presented. Granville recommends that the proposed questionnaire be reviewed and modified as necessary to meet the needs and desires of the organizations that agree to co-sponsor the questionnaire.

The identification of crucial conceptual and methodological issues was a by-product of the current effort which greatly contributed to the selection of the most appropriate areas which should be covered in any future instrument, as well as to the questionnaire wording and format. The questionnaire, as constructed, is intended to address the deficiencies identified earlier that reduced the usefulness of past national surveys. Specifically, Granville recommends that those points be addressed as follows:

- Seasonal aspects of exercise--Granville has chosen to ask a direct question about the period(s) during which an exercise is pursued, rather than try to make difficult judgments about when a survey should be conducted to minimize problems associated with the seasonal nature of exercise.

  Granville is reluctant to suggest that a survey be conducted at any specific time of the year because no objective basis for such a preference is apparent. However, our subjective belief is that the transitional periods of spring or fall may be more desirable than winter or summer. During the spring and fall, activities of the previous season are probably still fresh in one's memory while at the same time the upcoming season's activities are just coming to mind.

  Information on seasonal aspects of various forms of exercise could be useful in the timing of public awareness campaigns.

- Regular exercise--Granville proposes that the collection of participation information include data on frequency duration and intensity by activity, rather than making an arbitrary decision about a definition of regular exercise. This approach would allow any analyst to classify data on individuals as a function of their own needs and categories.

- Prompted versus non-prompted responses--For a number of reasons cited earlier, Granville strongly favors the use of prompted responses. The most dominant reason for this preference is to allow comparisons of survey results over time and to obtain the most important in the sense of significant, rather than the most salient or conspicuous, responses.

- Demographic classification consistency--In the technical notes to the survey instrument (see Exhibit VI-1), demographic classifications are suggested. Granville believes that these classifications are appropriate based on its review of past surveys, but would be satisfied if other reasonable classifications were to be consistently used.

  Data that would provide regional distinctions in terms of the types and timing of exercise and sports participation also could be helpful in the development of public awareness efforts.

- Beneficial types of exercise--Aerobic exercises are widely considered to be the best means of maintaining and improving an individual's cardiorespiratory physical fitness. Aerobic exercise, in simple terms, is considered to be any body movement which makes one's heart beat rapidly and produces heavy breathing to the extent that maximal oxygen uptake is sustained for at least fifteen minutes. Improved physical fitness as a function of the "training effect" occurs when an aerobic exercise is performed for at least 20 uninterrupted minutes per session at least three times a week over a period of time.[1]

  Based on the definition above, many forms of exercise can be aerobic depending on how a person engages in them. However, some activities are much more likely than others to require aerobic exercise when participation occurs. Given the goals of ODPHP and the goals in *Promoting Health/Preventing Disease--Objectives for the Nation*, Granville believes that it would be useful to identify aerobic activities as a basis for focusing on the exercises and sports that are effective in improving an individual's cardiorespiratory physical fitness. In addition, some of these exercises contribute to improve physical fitness in terms of strength and/or flexibility. Granville suggests that ODPHP consider the following activities to be aerobic:

- Running/jogging
- Swimming*
- Squash
- Handball
- Basketball
- Wrestling
- Boxing
- Soccer
- Gymnastics
- Tennis*
- Bicycling*
- Calisthenics*
- Skating*—ice or roller
- Snow Skiing*—downhill or cross country
- Walking*
- Hiking*
- Dancing*
- Rowing*
- Jumping rope*
- Stair climbing*
- Weightlifting (rapid repetitions)*

> Because the beneficial nature of some exercise depends on the intensity of the activity as well as its frequency and duration, it is important to collect intensity data. When frequency, duration and intensity are all known for specific exercises and in total, estimates of caloric expenditures and expected benefits can be made. The use of metabolic cost ratio as described by Karvonen[2] to estimate energy expenditure will produce more accurate figures than the method used by Perrier. In turn, the estimates of the benefits of exercise will be better.

In addition to addressing the issues above, the questionnaire is broken into two sections: major questions and supplemental questions. The latter questions are seen as being of interest of ODPHP and others but having less direct relevance than the major questions. Ideally, the major questions would be asked each and every time that a survey was implemented; the supplemental questions would be included in surveys on an as needed or as desired basis.

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* When done vigorously for at least 20 minutes

Even though Granville has put a considerable amount of thought into the proposed questionnaire, a pretest of the survey instrument is needed, nonetheless, to identify problems with wording, response categories, or sequence of questions. A pretest may require some time and effort, but it would avoid problems that would confound the analysis or the conclusions.

In the future use of this survey instrument or in the conduct of other general population surveys, ODPHP or other implementors may want to consider investigations into one or more the following areas:

- Examine whether individual activity patterns fall into core and peripherial activities. The reason for such an examination would be to test the hypothesis that, for any given individual who is active in sports, there are a limited number (one, two, or three) of core activities that account for a large majority of a person's exercise activities. Peripherial activities would be the ones that are pursued on a more intermittent and sporadic basis. If this is the case, it may affect the means by which ODPHP chooses to convey its fitness message.

- Conduct research on whether involvement in exercise has a synergistic effect, i.e., whether involvement creates a desire to be more involved in exercise and sports. In reviewing survey information on exercise patterns, the persons who feel that they do not get enough exercise, reasons for exercise, and benefits of exercise, it appears to Granville that increased involvement in exercise may have a synergistic effect.

  If there is a synergistic effect with involvement in exercise, this too could have implications for the means by which a national policy on physical fitness is structured and implemented. Furthermore, if such an effect does exist, it would provide support for the current ODPHP strategy of encouraging incremental increases in exercise participation.

  In addition, it would be interesting to know if there is any synergistic effect among the health promotion practices. For instance, are higher levels of exercise correlated with (or influence) other health habits, e.g., nutrition and weight control. This information also could be useful to ODPHP in directing its health promotion efforts.

Another possibility for ODPHP in cooperation with PCPFS is to examine the potential for assembling a group of public, and possibly private, organizations that would be interested in supporting a periodic assessment of physical activity patterns and attitudes. As noted in an earlier Granville report for ODPHP on physical fitness and exercise policy in the U.S, Canada, and Australia, there are numerous private sector parties in the country that have become interested in physical fitness and exercise in the last several years. Three of the most common groups are employers, corporations with general or specific concerns about health care or fitness, and insurors.

Given the present level of private sector interest and the current climate of government fiscal constraint, the opportunity for bringing together a consortium of interested parties is greater now than it has been at any time in the past. To the extent that awareness of the benefits of exercise and sports increases and involvement in physical activities grows, future opportunities for coordinating interest in a representative and periodic exercise survey will be enhanced. Furthermore, common sponsorship of a survey by public and private sectors may provide a foundation for development and implementation of other jointly sponsored physical fitness and associated activity initiatives.

In conclusion, Granville has four recommendations for ODPHP as follow:

> **RECOMMENDATION #1:** ODPHP should seek to find other organizations and groups to co-sponsor a survey on either physical fitness or physical activity or both.
>
> **RECOMMENDATION #2:** ODPHP should give highest priority to a survey that would measure physical fitness status, physical activity patterns (work, daily maintenance and leisure time aspects), and the association between the two. Physical fitness assessments alone or physical activity pattern surveys alone will not be as useful as a combination of the two.

RECOMMENDATION #3: ODPHP should be willing to spend some time and effort to promote the adoption of uniform survey measures for physical fitness, and uniform questionnaire instruments for physical activity behaviors and attitudes. The availability of consistent survey results over time would be extremely useful. In particular, information should be sought on frequency, duration, and intensity of exercise as well as on seasonal aspects of participation. Granville believes that further refinement of its proposed questionnaire is a good starting point for such a survey.

RECOMMENDATION #4: ODPHP should conduct research on the extent to which: 1) leisure-time physical activity patterns are comprised of core versus peripherial activities, 2) involvement in exercise has synergistic effect leading to increased activity, and 3) involvement in exercise has a synergistic effect on other health promotion behaviors.

EMPLOYERS

The available information from surveys, articles and other sources does not provide many useful insights into employee fitness programs. Two basic data problems exist on employee fitness programs: the data are limited, and they were not collected in a manner that allows reliable generalization. More specifically, one or more of the following statements apply to available data concerning fitness programs sponsored by employers:

- Data collection instruments contained questions that were poorly phased or suffered from definitional problems
- Random samples were not selected which would have permited the results to be representative of a stated population
- A bias existed towards surveying large companies which would be more likely to have employee fitness programs
- Small sample sizes limited either the applicability or the reliability of the results
- Low response rates existed
- Rigorous study procedures or survey implementation methods were not utilized

- Eligibility constraints for programs were not identified
- Information from Canadian firms are incorporated in survey results.

Moreover, there was little opportunity to compare results since there was generally only one source for most of the information available. The overall effect is that the lack of reliable and representative information overshadows other concerns that might be expressed about gaps on deficiences in this information.

The most obvious gaps and deficiencies are that 1) no well designed research on the actual benefits (and their comparison with costs) of employee fitness programs has been conducted, 2) there have been no attempts to define what constitutes an employee fitness program, 3) appropriate activities and facilities for an employee fitness program have not been identified, and 4) factors which facilitate and inhibit the establishment of employee fitness programs have not been well documented.

Recommendation

Granville recommends that ODPHP work with other public and private organizations to encourage funding of a broad based employee fitness program survey of a representative group of U.S. companies. Areas of investigation would ideally include:

- Incidence of employee fitness programs
- Characteristics, to include eligibility, supervision and access time
- Type of facilities made available--both in-house and at outside locations
- Benefits of employee fitness programs in terms of productivity, absenteeism, morale, health care costs, etc.
- Cost--initial investments, continuing program costs, employee contribution, and comparison to benefits

- Participation rates, duration and frequency for such programs along with new start and dropout data
- Types of activities which are part of existing employee fitness programs.

A number of organizations would probably have interest in a survey of employee fitness programs. They include the National Heart, Lung, and Blood Institute, the National Institutes of Occupational Safety and Health, the Occupational Safety and Health Administration, Bureau of Labor Statistics, the American Association of Fitness Directors in Business and Industry, and the National Employee Services and Recreation Association. All of these organizations should be considered as potential contributors to an investigation of employee fitness programs.

Thus, it is recommended that:

> **RECOMMENDATION #5:** Since OMB has disallowed an employee fitness program survey by ODPHP, the agency should seek to develop a coalition of organizations that can fund such a survey whether it be under a public or private aegis.

SCHOOLS

In general, limited data were available on school physical fitness and sports programs, activities and participation. The broadest and most detailed information in this vein came from the NCAA survey of its member colleges and universities. Intercollegiate, intramural, physical education programs, recreational clubs, informal recreational and facility data were provided. Both the number of institutions offering such activities and the number of students participating were provided.

Available and useful data about exercises and sports activities for other school levels is much more scarce. Junior college information consisted only of the average number of sports offered, the number of institutions offering the most common sports, and the proportions of males and females involved in intramural and interscholastic sports. High school participation information was available for 39 interscholastic and intramural sports. No information was available for the elementary school level.

Surveys of school exercise and sports activities typically were conducted by national school associations using rudimentary rather than rigorous data collection procedures. Validation checks were not used, and in some cases response rates are not known. Furthermore, the high school data are known to suffer from inconsistent data collection procedures because different states collect data in dissimilar ways. Finally, it is possible, if not probable, that definitional problems exist in terms of how certain activities, programs, or participation were defined by the respondents to surveys.

It is obvious that a large number of gaps exist relative to the fitness and sports information which has been collected from schools. None of the surveys provided information on 1) physical education program curricula or frequency, 2) unduplicated numbers and percents of students involved in intramural and/or interscholastic/intercollegiate sports activities, 3) physical activity participation over and above that in organized settings, or 4) the physical fitness status of students.

Other missing information for one or more of the school groups includes physical education requirements and participation, availability of facilities and the extent to which students have the time to use them, and the results of any performance tests that may have been given.

Finally, it is clear that very little useful information is available on the target group of greatest interest to ODPHP, students age 10 to 17. In line with this need, ODPHP has engaged Granville to develop physical fitness status measures and a physical activity survey instrument for students. Further, ODPHP is planning to use the physical fitness test and physical activity questionnaire in an upcoming, large-scale OPDHP evaluation of school students ages 10 through 17 starting in late 1982 and extending for one year.

Recommendation

Since ODPHP is in the process of developing physical fitness measures and a physical activity questionnaire and is planning to survey a national sample of schoolchildren, Granville does not have any major recommendations. ODPHP is already pursuing the recommendation that would have been made. However, in addition to measures of physical fitness, Granville believes that desirable information to collect would be:

- Physical education class contents, frequency, duration, and requirements
- Intramural and interscholastic participation rates in exercise and sports with an unduplicated total, either in absolute numbers or percent
- Participation in other forms of exercise and sports
- Exercise and sports facilities and access time.

EXHIBIT VI-1

PROPOSED QUESTIONNAIRE ON LEISURE-TIME PHYSICAL ACTIVITY

1. I am going to read you a list of leisure-time physical activities and I would like you to tell me if you participate in any of these activities.

Activity	**Participation**	
	Yes	**No**
Walking in a leisurely fashion		
Walking briskly		
Swimming as recreation		
Swimming laps or vigorously		
Calisthenics		
Bicycling		
Bowling		
Jogging or running		
Hiking		
Weight training/lifting		
Downhill snow skiing		
Cross country snow skiing		
Ice skating		
Ballet or modern dance		
Disco or square dance		
Ballroom dance		
Tennis		
Basketball		
Softball		
Baseball		
Golf		
Volleyball		
Football		
Racquetball or squash		
Soccer		
Handball		
Yoga		
Martial Arts		

PROMPT: What else? until no more offered

For each activity the respondent admits to engaging in, utilize one of the probing sheets attached. Special Probing Sheets are to be used for the following activities:

Jogging or running; Tennis

For all other activities, use General Probe Sheet and fill in name of activity being probed where appropriate.

EXHIBIT VI-1 (continued)

GENERAL PROBE SHEET FOR CONTINUATION OF QUESTION 2:

2a. During which months of the year do you participate in (the activity named)?

____ Jan.
____ Feb.
____ Mar.
____ Apr.
____ May
____ June
____ July
____ Aug.
____ Sept.
____ Oct.
____ Nov.
____ Dec.

2b. What would you say is the average number of times a week that you participate in (the activity named)?

____ # of times a week

2c. What would you say is the average length of time involved that you are actively participating—rather than getting ready for or relaxing afterwards—in (the activity named)?

____ time in minutes

2d. When you are involved in this activity, do you usually have

(a) heavy breathing,
(b) above normal breathing, or
(c) slight changes from normal?

EXHIBIT VI-1 (continued)

CIAL PROBE SHEET FOR CONTINUATION OF QUESTION 2:

GING/RUNNING

. During which months of the year do you jog or run?

____ Jan.
____ Feb.
____ Mar.
____ Apr.
____ May
____ June
____ July
____ Aug.
____ Sept.
____ Oct.
____ Nov.
____ Dec.

. What would you say is the average number of times a week that you jog or run during these months?

____ # of times a month

. What would you say is the average length of time you spend running or jogging each time you go out?

____ times in minutes

. When you are involved in this activity, do you usually have

(a) heavy breathing,
(b) above normal breathing, or
(c) slight changes from normal?

. Many people who are considered to be expert runners make the distinction between running and jogging. They define running as involving a relatively long stride where the individual goes steadily forward by springing steps, often with a sense of urgency. On the other hand, they define jogging as moving up and down or about with a short, heavy motion—a sort of slow, leisurely, monotonous trotting space. Given this difference, would you say that your activity consists of mostly running or mostly jogging?

____ mostly running
____ mostly jogging

EXHIBIT VI-1 (continued)

SPECIAL PROBE SHEET FOR CONTINUATION OF QUESTION 2:

TENNIS

2a. During which months of the year do you play tennis?

____ Jan.
____ Feb.
____ Mar.
____ Apr.
____ May
____ June
____ July
____ Aug.
____ Sept.
____ Oct.
____ Nov.
____ Dec.

2b. What would you say is the average number of times a week that you play tennis during these months?

____ # of times a week

2c. What would you say is the average length of playing time involved each time you play tennis?

____ time in minutes

2d. Do you play mostly singles or doubles?

____ mostly singles
____ mostly doubles

2e. When you are involved in this activity, do you usually have

(a) heavy breathing,
(b) above normal breathing, or
(c) slight changes from normal.

EXHIBIT VI (continued)

3. During the past year, have you taken part in any exercise classes, for example, aerobic dancing, jazzercise, slimnastics, or have you been exercising with the help of someone who has some professional knowledge about physical fitness?

____ yes
____ no

3a. (If yes) How many months out of the year did you actively participate in this exercise program?

____ months

3b. (If yes) About how many times a week would you say that you participated in this exercise program during the months you were active in it?

____ times a week

3c. (If yes) And about how many minutes would you say that you spend during each occasion you exercised within the context of this program?

____ minutes per occasion

4. Is most of your leisure-time physical activity done alone, with one other person, or in a group?

____ Alone
____ With one other person
____ With a group

5. Which of the reasons on this list would you give as the major reasons for your participation in leisure-time physical activities?

Reasons	Yes	No
To have a good time		
To feel better		
To meet friends		
To lose weight or keep weight off		
To feel better psychologically		
To stay healthy		
To improve muscular strength		
To improve coordination		
To strengthen my heart and lungs		
To improve flexibility		
To reduce tension		
My doctor recommends it		
What else? (specify)		

(IF MORE THAN THREE REASONS GIVEN, ASK: Which of these would you say are the three most important reasons? AND PROMPT WITH REASONS OFFERED)

EXHIBIT VI-1 (continued)

6. How important do you feel it is for you to get vigorous exercise at least once a week?

____ Very important
____ Somewhat important
____ Not very important
____ Not important at all

7. Sometimes the amount of leisure-time physical activity people engage in can change over time. Would you say that your level of relatively vigorous physical activity (for example, sports or exercise participation) has changed from what it was a year ago?

____ yes
____ no

7a. (If yes) A year ago, would you describe your leisure-time physical activity level as:

(a) not active at all
(b) a little less active than you are now
(c) a lot less active than you are now
(d) a little more active than you are now
(e) a lot more active than you are now

8. Over the past five years, has your level of participation in exercise and sports remained fairly constant, fluctuated a little, or fluctuated alot?

(a) Remained fairly constant
(b) Fluctuated a little
(c) Fluctuated alot

9. Do you think that you get enough exercise?

YES ______
NO ______

EXHIBIT VI-1 (continued)

9a. (If no) Which of the reasons on this list would you give as the main reasons that you aren't getting enough exercise.

Reasons	Yes	No
Not interested		
Don't have enough time		
No one to participate with		
Poor health		
Don't have enough energy		
Cost of equipment or facilities		
Lack of good facilities		
Family obligations		
Physician's recommendation		
Poor weather		
Not disciplined enough		
What else? (specify)		

(IF MORE THAN THREE REASONS GIVEN, ASK: Which of these would you say are the three most important reasons? AND PROMPT WITH REASONS OFFERED)

10. Would any of these factors be very likely to lead you to be more involved in sports, exercises, or other leisure-time physical activities?

Reasons	Yes	No
Less expensive facilities		
A physician's recommendation		
If you had someone to do the activity with		
A four-day work week		
Influence of your family		
If a fitness program were begun at work, would you be more physically active at other times		
More flexible scheduling of your day		
Greater availability of facilities		
If your friends began doing it		
If my work were less physically demanding		
More information on benefits of physical fitness		
Influence of friends who are fitness enthusiasts		
Nicer weather		
There are none		
What else? (specify)		

(IF MORE THAN THREE REASONS GIVEN, ASK: Which of these would you say are the three most influential factors? AND PROMPT WITH FACTORS OFFERED)

EXHIBIT VI-1 (continued)

11. I'd like to ask you about where you get information concerning such health care topics as fitness, nutrition, smoking, drinking, and coping with stress. For each source identified below, would you please tell me whether you personally get a great deal of information from this source, some but not a good deal, only a little, or no information at all about these topics.

Source	A great deal	Some but not a great deal	Only a little	No information at all
Your own doctor or doctors				
Public service messages on television or radio (for example, the Cancer Society on cigarette smoking)				
Television or radio programs				
Articles about health in magazines and newspapers				
Publications from organizations like the Heart Association, the Cancer Society, etc.				
Medical columns in newspapers and magazines				
Medical news stories on television and radio				
Health courses you have taken in school				
Advice from the pharmacist or druggist you use				
Friends, relatives or neighbors				
Government publications on health				

EXHIBIT VI-1 (continued)

Source	A great deal	Some but not a great deal	Only a little	No information at all
Advertising by drug companies, food companies, etc.				
Advice in booklets from your group insurance carrier				
Medical advice from your employer's medical department or in company publications				
Medical advice from your union's medical department or in union publications				

12. Does your job involve any vigorous physical activity, for example, heavy lifting, that noticably increases your heart rate.

____ Yes
____ No

12a. (If yes) On average, how many days per week and hours per day does your job require vigorous physical activity?.

____ number of days per week
____ number of hours per day

12b. (If any) Do instances of this activity tend to be of

____ relatively short duration, 15 minutes or less, or
____ relatively long duration, more than 15 minutes

EXHIBIT VI-1 (continued)

13. Do your daily living activities, such as housework, yardwork, or going to and from work, involve vigorous physical activity that noticably increases your heart rate?

____ Yes
____ No

13a. (If yes) On average, how many days per week and hours per day does your job require vigorous physical activity?

____ number of days per week
____ number of hours per day

13b. (If yes) Do instances of this activity tend to be of

____ relatively short duration, 15 minutes or less, or
____ relatively long duration, more than 15 minutes

14. Do you believe that exercise and physical activity are associated with better health

____ Yes
____ No

SUPPLEMENTAL QUESTIONS

ASK EVERYONE

1. Are you satisfied with your present physical condition?

____ Yes
____ No

2. Are you definitely planning a change in your participation in exercise or sports in the near future?

____ Yes
____ No

2a. (If yes) Do you plan to become
(a) much more involved
(b) somewhat more involved
(c) much less involved
(d) somewhat less involved

3. How important is exercise to you compared to other non-work activities?
   - (a) very important
   - (b) somewhat important
   - (c) about the same
   - (d) somewhat unimportant
   - (e) very unimportant

4. Have you discussed with your doctor what an appropriate level of exercise is for you?

   YES _______ NO _______

ASK ONLY OF THOSE RESPONDING "NO" TO QUESTION 7 OF THE BASIC QUESTIONNAIRE

5. When did you begin your present level of activity?
   - (a) Within the last six months
   - (b) More than six months but less than a year
   - (c) Between one and three years ago
   - (d) Four or more years ago

ASK ONLY OF THOSE RESPONDING "YES" TO QUESTION 7 OF THE BASIC QUESTIONNAIRE

6. Would you say that the change in your overall level of activity is because:

   (a) the number of activities you've engaged in has changed

   (b) you've changed your level of involvement within the activities rather than the number of activities

EXHIBIT VI-1 (continued)

ECHNICAL NOTES

Given that we have taken on the task of formulating such an instrument n the absence of currently unavailable information about exactly what kinds f organizations would be utilizing it, and hence knowing nothing about the cope of purposes or facilities involved, a detailed treatment of methodo- ogical issues does not seem to be appropriate. However, the following issues re raised to serve as guides for thought or discussion when more complete nformation is available concerning how and by whom the instrument is likely o be utilized.

dministration

Although as always cost is a dominant consideration in the decision to tilize face-to-face or telephone interviews, another factor which should be arefully considered revolves around how the method of administration can xacerbate the influence of the context effect. In other words, given the lear purpose of the questionnaire and the positive social value which fitness as recently acquired, the socially desirable response would be to exaggerate ne's fitness-related activities. It is possible that face-to-face interviews ould exaggerate even further this tendency for respondents to place them- elves in a favorable light. In contrast, the relative anonymity of a tele- hone interaction may tend to minimize somewhat the need to present oneself avorably and correspondingly reduce possibly inflated estimates of fitness ctivities. Since it is extremely difficult to word the questions in a manner hich would create the appearance of complete impartiality, this potential nfluence is one which should be given careful consideration.

EXHIBIT VI-1 (continued)

Demographic Variables

The most important consideration with regard to the collection of socio-demographic data is that of consistency. If there is a desire to monitor progress toward stated goals over time it is crucial that some kind of consistency be maintained, regardless of what final response alternatives are decided upon. Therefore, careful initial consideration should be given to the needs of the organizations utilizing the instrument and then demographic breakdowns should be specified and consistently used. On the basis of the data we have reviewed, Granville recommends that the following information and related breakdowns be seriously considered.

- Age groups (these recommendations are based on the assumption that CDPHP will continue their efforts to develop a school-based questionnaire which will collect desired information from those individuals between ages 10 and 17.)
  - 18-24
  - 25-34
  - 35-44
  - 45-54
  - 55-64
  - 65+
- Race
  - White
  - Black
  - Native American (Indian, Eskimo, Aleut)
  - Asian or Pacific Islander
  - Other

  Are you of Spanish origin?

  - Yes
  - No

  (If Yes) Which country best describes your ethnic group
  - Puerto Rico
  - Cuban
  - Mexican
  - Chicano
  - Other Latin American
  - Other

EXHIBIT VI (continued)

- Family income
  - 0-2,499
  - 2,500-4,999
  - 5,000-7,499
  - 7,500-9,999
  - 10,000-12,499
  - 12,500-14,999
  - 15,000-17,499
  - 17,500-19,999
  - 20,000-22,499
  - 22,500-27,499
  - 27,500-29,999
  - 30,000-32,499
  - 32,500-34,999
  - 35,000-37,499
  - 37,500-39,999
  - 40,000-44,999
  - 50,000-59,999
  - 60,000-74,999
  - 75,000 and over

- Residential location (stratifier)
  - central city (50,000 or more population)
  - metropolitan areas other than central city
  - non-metropolitan or central city

- Region of country (stratifier)
  - Northeast
  - North Central
  - South
  - West

- Occupational classification
  - Executive, administrative, managerial
  - Professional, specialty
  - Technician or related support occupation
  - Sales
  - Administrative support including clerical
  - Private household occupation
  - Protective service occupation
  - Other (non-private household or protective) service occupation
  - Farming, forestry, or fishing
  - Precision production, crafts or repair occupation
  - Machine operator, assembler, or inspector (non-managerial)
  - Transportation and material moving
  - Handler, equipment cleaner, helper, or laborer

- Health status
  - No disability
  - Partial disability (able to work full-time, regularly and at the same work but with limitations in the kind or amount of work that can be performed)
  - Severe disability (unable to work altogether or regularly)

Finally, depending again on an analysis of the needs and resources of concerned organizations, decisions need to be made about whether the continental United States (48 states) or all 50 states should be surveyed, and whether the omission of resident student and other institutionalized groups (e.g., those living in military barracks) is warranted by the increased cost which would be incurred if they were to be included. In addition, the occasionally utilized practice of having a primary respondent give information about other family members should not be considered because of the demand of many of the items for highly subjective judgments.

APPENDIX A

APPENDIX A

SOURCES CONTACTED

Associations

- Administrative Management Society
- American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD)
    - National Association for Sports and Physical Education
- American Athletics Union
- American Association of Fitness Directors in Business and Industry
- American School Health Association
- National Association of Counties
- National Association of County Park and Recreation Officials
- National Collegiate Athletic Association
- National Education Association
- National Employee Services and Recreation Association
- National Federation of State High School Associations
- National Jogging Association
- National Public Health Program Reporting System--Association of State and Territorial Health Officials
- National Recreation and Park Association
- National School Boards Association
- Young Men's Christian Association (YMCA)
- Young Women's Christian Association (YWCA)

Corporations Having Physical Fitness Programs

- Exxon Corporation
- IBM Corporation
- Kimberly Clark Corporation
- New York Bell Telephone Company
- Xerox Corporation
- NASA

APPENDIX A (continued)

SOURCES CONTACTED

Corporations Providing Services or Conducting Research Related to Physical Fitness

- A.C. Neilson Company
- Educational Research Service
- Fitness Systems, Inc.
- Gallup Poll
- Louis Harris and Associates
- Management Sciences for Health, Inc.
- Parcourse, Ltd.
- The Rand Corporation
- Roper Organization
- Social Science Research Council
- Wellness Resource Center
- Yankelovich, Skelly and White, Inc.

Federal Government Agencies

- Center for Disease Control
  - Center for Health Promotion and Education

- National Aeronautics and Space Administration

- National Center for Education Statistics

- National Center for Health Statistics
  - National Health Interview Study
  - Health and Nutrition Examination Survey
  - National Survey of Personal Health Practices and Consequences

- National Park Service
  - John Peine (Ann Arbor, Michigan)
  - Dr. Merle Van Horne (Washington, DC)

APPENDIX A (continued)

SOURCES CONTACTED

- President's Council on Physical Fitness and Sports
- U.S. Forest Service
  - Research Branch (Durham, NH)
  - Recreation Management Staff (Washington, DC)
  - Northeast Experiments Station (Broomall, PA)
  - Agricultural Experiments Station, University of Vermont (Burlington, VT)

ealth and Medical Organizations

- American College of Sports Medicine
- American Health Foundation
- American Public Health Association
- Blue Cross and Blue Shield Association
- Center for Fitness and Sports Research, University of Michigan
- Center for Health Promotion, Columbia University
- Health Insurance Association of America
- Institute for Aerobics Research
- Institute for Behavior and Health
- National Center for Health Education
- National Science Foundation
- Vanderbilt University School of Medicine

ibraries and Bibliographic Services

- Clearinghouse on Health Indexes National Center for Health Statistics
- DIALOG - U.S. Department of Health and Human Services
- Library of Congress
- Index Medicus (for health journals)
- National Library of Medicine's In-House Comcat (for books published since 1965).

APPENDIX A (continued)

SOURCES CONTACTED

Other Sources

Dr. D. Eddington
Department of Physical Education
University of Michigan

Dr. R.S. Paffenbarger
Stanford University

Dr. Bernard Gutin
Center for Health Promotion
Columbia University

APPENDIX B

APPENDIX B

Canadian Surveys

INTRODUCTION

In the course of identifying and subsequently acquiring surveys of the general population concerning participation in physical fitness activities, two surveys representative of parts or all of the Canadian population were also investigated. Although we do not mean, by their inclusion in this Appendix, to imply that the results can be considered to be at all indicative of U.S. trends, it was thought that the availability and relative congruity of the findings with the major U.S. surveys justified a brief discussion, if only to illustrate conditions in a geographically and climatically similar nation with an clearly expressed concern with an national standards of physical fitness.

PHYSICAL ACTIVITY PATTERNS IN ONTARIO

Published in 1981, Physical Activity Patterns in Ontario (henceforth called Fitness Ontario) consisted of the findings from three surveys conducted by the Canadian Gallup Poll Ltd. in November 1978, and June and November 1979. Approximately 3,200 adults of 18 years or older, selected via a two stage stratified cluster design, were queried in face-to-face interviews.

Participation Levels

Respondents were asked about what type of physical activity, exercise, or recreation they had been involved in within the previous month and were also asked to provide approximate frequencies of participation. An average of 50 percent of the respondents reported that they participated in such activities at least once a week, with between 26 percent (November 1978) and 32 percent (June 1979) reporting involvement in fitness activity at least three times a week. Approximately 43 percent reported no activity during the prior month.

Of all the "participants" (those engaging in activity at least once a month—approximately 57 percent of the sample), 46 percent reported spending more than one hour a week in exercise and sports. The average length of time engaged in each activity (averaged over all identified activities), as well as in three selected activities, is presented in Exhibit B-1.

Profile of Participants

Comparison of the demographic characteristics of participants versus nonparticipants resulted in the observations that:

- more men than women reported participating in physical activity
- greater participation was found for younger age groups
- participation increased with higher education levels
- participants tended to be professionals/executives or sales/clerical personnel
- participation rates increased as income levels rose.

No differences were noted as a function of region within Ontario or community size.

Preferred Activities

In order of popularity, the top five most preferred year-round activities were:

- walking
- calisthenics
- jogging/running
- swimming
- bicycling.

EXHIBIT B-1

AVERAGE LENGTH OF TIME ENGAGED IN ALL ACTIVITIES AND THREE SELECTED ACTIVITIES FROM THE FITNESS ONTARIO SURVEY*

	Percent of Participants			
Average time engaged in exercise	All Activities	Walking	Jogging/ Running	Squash
0-15 Min.	10%	8%	16%	--
16 - 30 Min.	19%	29%	42%	6%
31 - 60 Min.	24%	32%	19%	65%
over 60 Min.	46%	31%	19%	29%

---

* Five hundred and fifty-five participants engaged in 991 activities.

Also, there were seasonal differences with, for example, skating/hockey among the top five in the fall/winter surveys, baseball ranking sixth in the summer, and bicycling ranking second in the summer, but only seventh in the fall/winter.

In addition, the following sex and age differences were noted:

- More females walk than males
- More older people walk than younger people
- Swimming was more popular with women than men
- Men engaged in a wider variety of activities
- Younger people engaged in the most strenuous activities.

Barriers to Activity

Individuals who reported engaging in activity less than four times a month were asked the reasons for inactivity. The most often cited reason was lack of free time with the second most common reason was being physically unable. It should be noted, however, that the variety of reasons offered by the three U.S. surveys which covered this topic far exceeded those covered in Fitness Ontario.

Activity Level: Perceptions and Plans

About half of the respondents (51 percent) said they were getting sufficient activity; this was the case for both non-participants (51 percent) and those individuals exercising at least three times a week (57 percent). However, those who exercised less than three times a week were more likely to feel that they should be getting more exercise (57 felt this).

Non-active individuals were also asked about their plans for becoming active in the future. Nineteen percent said they were definitely planning to begin some form of physical activity in the near future; another 32 percent said they'd like to to take part in some form of physical activity. Finally, however, a full 25 percent said they were definitely not interested in becoming involved in physical activity; in fact, the majority of this group said they felt they got enough exercise. Exhibit B-2 presents the plans of inactive individuals as a function of their perceived present level of activity. It is clear then, that of those who feel they should get more physical activity, over 70 percent are definitely planning to or would like to do so.

CANADA'S FITNESS

The 1981 Canada Fitness Survey consisted of both a questionnaire to assess physical activity patterns and a physiological testing procedure to assess fitness levels. Eighty-eight percent of an enumerated sample of 13,440 households agreed to particpate in one or more aspects of the survey; these households comprised a sample designed to be representative of the regions of Atlantic Canada, Quebec, Ontario, Prairies and British Columbia. A systematic sample of one-third of the households was selected to serve as the basis for a report of preliminary findings. This description is based on the preliminary report.

Participation Levels

Seventy-seven percent of the sample aged 14 years and older said they had participated in some sport within the preceeding 12 months, and 66 percent reported having taken part in exercises. ("Exercise" included such activities as walking, jogging, cycling, calisthenics and exercise classes.) It was further reported that these figures represented a five-year increase (from a 1976 survey) of 23 percent in sports, whereas exercise participation stayed approximately the same (63 percent in 1976).

Profile of Participants

The preliminary findings for the 1981 survey were reported to be virtually the same as the 1976 findings with regard to the question of who participates in fitness activities. In general, the data showed that:

EXHIBIT B-2

PERCENT OF INACTIVE PERSONS PLANNING TO BECOME MORE ACTIVE FROM THE FITNESS ONTARIO SURVEY

	Perceived Need	
Plans on Physical Activity	Get Sufficient Activity	Should Get More Activity
Definitely planning	13	24
Would like to take part	18	47
Definitely not interested	38	14
Physically unable	18	13
Other/none apply	12	2

- Sports were more popular with men, while exercises were more popular with women. (The latter finding indicates a change from 1976.)
- As the age of the respondent increased, activity levels decreased, especially for sports
  - over the 10-14 through 65+ age ranges, sports activity dropped 70 percent whereas exercise activity dropped only 37 percent.
- Occupational groups, although not differing in sports activity levels, show differential patterns of exercise participation
  - professionals and managers exercised more than other white collar workers, who in turn exercised more than blue collar workers.
  - full-time homemakers had exercise patterns near the population mean but were low on sports.

Preferred Activities

Although breakdowns of participation in different activities were not reported, activities which respondents said they'd like to begin were included. It can be seen in Exhibit B-3 below that the attractiveness of many activities have apparently changed since 1976. In fact, six of the ten most popular in 1976 were not ranked among the top ten in 1981; these included alpine skiing, golf, hockey, ice skating, curling and gymnastics.

Barriers to Activity

The most frequently cited reason for why individuals did not increase their activity was lack of time due to work (43 percent). Another oft-cited reason was that facilities were too distant (16 percent offered this reason). Lack of time due to other leisure activities was a factor cited by 15 percent of the respondents. Additional reasons reported by more than ten percent of the respondents included: lack of energy, lack of self-discipline, and cost. Finally, it should be noted that 21 percent of the sample said they didn't want to increase their activity level.

EXHIBIT B-3

ACTIVITIES PEOPLE (AGE 14 AND UP) WOULD LIKE TO BEGIN FROM THE FITNESS CANADA SURVEY

Activity	Proportion-1981	Rank-1981	Rank-1976
Swimming at a pool	12	1	2
Jogging	8	2	23
Tennis	7	3	1
Calisthenics	6	4	>40
Cycling	6	5	24
Walking	4	6	31
Racquetball	4	7	39
Running	3	8	23
Bowling	3	9	5
Cross-Country Skiing	3	10	4

Activity Level: Perceptions

When asked about the relative importance to contribution of each of a number of factors to personal well-being, regular physical activity was ranked as "very important" or "of some importance" by 78 percent of the sample (age 10 and above). This gave it a ranking of fifth among 11 factors, and put it behind only: adequate rest and sleep, a good diet, adequate medical and dental care, and maintenance of proper weight.

APPENDIX C

APPENDIX C

STATE SURVEYS

INTRODUCTION

Information about exercise participation and patterns in individual states was found in two sources: state recreational plans, and Centers for Disease Control Health Education-Risk Reduction surveys. Overall, ten states have conducted surveys with fitness-related components as support for their state recreational plans. Nine states have implemented the CDC surveys. Although valuable information was found, regional characteristics were difficult to discern because of methodological differences. Summaries of the surveys and their results are presented below.

HEALTH RISK FACTOR SURVEYS

Introduction

Because of a growing concern about health risk factors, the Federal government established the Health Education-Risk Reduction Grant program (HERR) which is administered by the Centers for Disease Control (CDC).

As part of this program, CDC has funded a number of health risk factor surveys in individual states. At the time of writing this document, the results of nine state surveys have become available. Those results are summarized below. The questionnaires used and the methodologies followed were not standardized in the nine samples examined here, and thus comparability is precluded. However, the HERR surveys presently being conducted have been standardized, and those results will start becoming available in the coming year.

Typically, from one to three questions were asked about physical fitness, and they tended to be vague. Given the paucity of results, one would assume that a rather low priority has been given physical fitness by the states.

Colorado

The Colorado Department of Health conducted a random digit dialing telephone survey from April 16 to May 8, 1981. A total of 469 interviews were completed out of 769 attempted for a response rate of 61.0 percent. Only adults aged 18 and over were surveyed.

The results below are quoted directly from their report:

> Approximately a quarter of the survey respondents encounter a "great deal" of hard physical work in their job or daily household tasks. Of all the individuals surveyed, 47 percent of the males and 44 percent of the females surveyed exercise this frequently. The average frequency of exercising is 2.5 times/week. When exercising, 62 percent of all the respondents, 69 percent of the male respondents and 58 percent of the female respondents keep at their exercise greater than half an hour each time. Approximately 50 percent of all the respondents usually exercise vigorously enough each time to cause sweating. Survey respondents participate in physical recreation or hobbies an average of three times/week.

Connecticut

The Connecticut Department of Health Services commissioned a random digit dialing survey of 500 adults that was conducted in April 1981. Numbers were clustered according to telephone exchanges (first three digits) and chosen according to percent of population in a given cluster.

Those people reporting a "sedentary life style" totaled 28.8 percent with 35.9 percent of the men aged 55 and older, and 36 percent of women aged 55 plus being sedentary. Exercise for five or more days a week was reported by 47.6 percent of the population while 16.9 percent of the reported participating three to four days a week, and 15 percent one to two days a week. Participation for over one hour per session was reported by 24.6 percent. Exercise for up to 15 minutes was reported by 11.6 percent, up to 30 minutes by 20.8 percent, and up to one hour by 19.8 percent.

Georgia

The Georgia Department of Human Resources conducted their survey during a ten day period in October 1980 using a random digit dialing technique. The sample totaled 534 adults aged 18 and over.

As in other samples, women were slightly less apt to exercise with 38.7 percent reporting that they never exercise as compared to 32 percent of the men. In addition, men were slightly more apt to exercise every day then women with 20 percent of men reporting daily activity versus 17.4 percent of women. Men were also more apt to exercise for a longer period of time: 58.8 percent of men exercising for one hour or more at a time compared to 39.8 percent for women. Roughly, 15 percent of the women reported exercising for 15 minutes or less as compared to 6.9 percent of the men.

Running was by far the most favored activity with 40.8 percent of the exercising men and 33.2 percent of exercising women reporting this activity. The second most popular category for women was calisthenics with 22.5 percent of exercising women participating. The second most popular activities for men were team sports with a participation rate of 16 percent.

Maine

In November of 1981, the Maine Department of Human Services did a statewide random, face-to-face interview of 1,255 adults aged 15 and over. The interviews were conducted using questions from a National Heart, Lung, and Blood Institute survey.

The results from Maine indicate that 18.6 percent of the men and 24.1 percent of the women get no exercise. Participation in exercise for up to six hours per week was reported by 61.3 percent of the men, and 65.3 percent of the women. Exercise for more than six hours a week was reported by 20.1 percent of the men and 10.6 percent of the women. People over the age of 55 were most likely to get no exercise (30.1 percent of the men and 39.5 percent of the women), and least likely to participate for over six hours (14.8 percent of the men and 4.2 percent of the women). Of women aged 18 to 34 years, 71.4 percent got up to six hours per week; the comparable figure for men was 27 percent.

Massachusetts

In September 1980, the Massachusetts Department of Public Health surveyed 1,091 adults aged 16 years and up. A random digit dialing technique was used, and a response rate of 61.1 percent was achieved. Data were weighted to reflect each health service area's proportion of the adult population.

For the population in general, 71.3 percent had exercised at least once in the two months preceding the survey, and 56 percent were exercising the survey, and 56 percent reported exercising at least twice weekly. Over 25 percent of the respondents exercised daily. The median exercise time was 47 minutes.

The findings of the survey also tended to confirm some of the patterns found in the national surveys. For example, less than 50 percent of those 65 and older had exercised during the two months preceding the survey. However, for such persons who did exercise, they were more likely to exercise daily. Walking was the preferred exercise of the senior citizens.

Non-high school graduates were found to be the group least likely to exercise, and exercise participation was found to increase linearly with both income and education.

No questions were asked regarding the strenuousness of the exercises.

Massachusetts diverged from the other surveys, however, when reporting the most popular forms of exercise. Walking and jogging were reported as practiced by 14 percent and 12.8 percent of the respondents respectively, but the two forms most often cited at the top of the other surveys, bicycling and swimming, had participation rates of only 4.3 and 4.0 percent respectively.

Rhode Island

Results from Rhode Island came from the first 10,000 participants in their "wellness wagon" program, a computer equipped bus designed to give participants advice about health risk factors according to information given on their individual life styles. Participants were self-selected.

Those reporting participation in at least 20 minutes of vigorous conditioning exercise on a daily basis totalled 15.5 percent. Another 22.7 percent do so at least three times a week, 23 percent one to two times a week, and 38.8 percent seldom or never. Again, it must be stressed that these figures came from self-selected participants, suggesting a possible predisposition to greater concern about health and reducing the representativeness of the results.

South Carolina

A series of cross-sectional surveys were done by the South Carolina Department of Health and Environmental Control from late 1978 to early 1980. Housing units were clustered using mapping primaries and eight housing units were chosen from each cluster. All adult occupants (18 years and older) of each unit were included in the sample for a total of 5,500 persons. The purpose of this survey was to establish baseline data to be compared to later surveys. The results of a follow-up survey should become available in September 1982.

The only available data from the baseline survey are that 19 percent of the state population report participating in a regular exercise program, while 80 percent say they are not. One percent of the results are missing.

Utah

In September 1981, the Utah Department of Health conducted a survey using random digit dialing of 500 adults (ages 21 to 75). A questionnaire was then mailed to the participants. With several follow-up reminders, a 92.6 percent response rate was achieved.

Results published in the CDC morbidity and mortality weekly report state that 70 percent of Utah adults do not have a regular physical fitness program.

Wisconsin

The Wisconsin Department of Health and Social Services conducted a survey during January and February 1981 of 8,036 adults. A stratified random digit dialing technique was used in four sampling areas throughout the state. The women of the household was chosen to be the interviewee. Overall accuracy was determined to be ±3 percent.

When participants were asked "Who in your household is getting enough exercise?, 75.9 percent named a household member. Of these named, 54.5 percent were said to get enough exercise through normal daily activities, 13.1 percent participated in a sports program, and 8.2 percent had an exercise program.

Jogging/running was the most popular form of exercise at 3.4 percent followed by baseball with 2.8 percent, bicycling at 2.5 percent, and swimming at 2.2 percent. Other exercisers that had participation rates of 0.9 to 1.9 percent of the population were exercise, walking, softball, track, weightlifting, and physical education classes.

STATE RECREATIONAL SURVEYS

Introduction

The United States Department of the Interior has compiled recreational plans in its archives for all the states and territories of the U.S.A. Some of the states have conducted recreational surveys as the basis of or support for their recreational plans. In general, these surveys are oriented towards leisure and recreational activities. However, ten states have conducted surveys that provided some data relevant to physical fitness activities. Unfortunately, pertinent information is scarce.

Those states having pertinent data are briefly described below. Two exhibits having data on participation follow the state survey descriptions. Exhibit C-1 presents state information on percent participation for the ten most popular national exercise activities. The Exhibit C-2 provides per capita participation data for four states.

Arizona

The State of Arizona conducted personal in-home interviews with 3,750 heads-of-households from January to September 1977. The 3,750 interviews were divided into three groups of 1,240 and done between January-April, May-August, and September-December to account for seasonal variations in recreational participation.

Florida

From April 1978 to March 1979, the Florida Division of Recreation and Parks sent out 5,850 mail questionnaires to randomly selected households. Data were returned on 11,300 individuals throught the state.

While Florida is a semi-tropical state surrounded by oceans, it was still interesting to note that a high percent (70.9) of the state residents participated in salt water beach activities. This rate is almost twice that of similar activities in other surveyed states, i.e., lake swimming, pool use.) Other activities of interest such as hiking, bicycling, and tennis were also in the high average range when compared to other states. These results are probably due to Florida's climate which allows year round participation in most activities.

Illinois

From October 1976 to January 1977, Illinios conducted statewide telephone interviews with 10,000 households. As with most of the other state reviewed, most of the survey focused on leisure activities which included some physical fitness categories. The only statistic which was remarkable was that only 14.2 percent of the population participated in bicycle riding. Less than half the rate reported by every other state examined except Washington.

Indiana

Indiana's recreational plan was based on several surveys, and the supporting statistics were not clearly identified with specific surveys or associated methodology. Percent participation figures for various physical activities by state residents are average when compared to other state recreational data.

Kentucky

In 1978, Kentucky conducted a statewide survey by mail to determine demands for recreational activities. Of the 23,350 questionnaires mailed, 4,854 were returned for a response rate of 20.8 percent. While percentages of population participation were not given, per capita participations per year were calculated and reported. Rates for hiking and basketball were in the average range, but bicycling with a rate of 12.13 was much higher than data from any other state. Unfortunately, the reason for this difference remains unclear.

Maryland

Maryland conducted a random stratified sampling of all its counties and the city of Baltimore. Two survey instruments were used: one for telephone interviews and one for mail questionnaires. Both were conducted simultaneously in 1978 with 2,000 participants in each sample.

Maryland was the only state reviewed that reported the percentage of the population who walk as a leisure activity, although three other states gave per capita occasion rates. Therefore, the 40.5 percent participation rate for walking cannot be directly compared to other states. However, it is comparable to some national statistics. All other activities statistics were in the average range.

Michigan

Michigan's recreational survey results are also presented as activity occasions. Walking, jogging, and hiking data were in the average range. Statistics for bicycling were very high, second only to Kentucky. Although it has a relatively short season, swimming has the highest participation rate by far at 11.3 occasion per person. All occasion rates are calculated by dividing number of participations by the U.S. Census Bureau population figures for the state of Michigan.

Nebraska

In 1978, the Nebraska Annual Social Indicators Survey telephoned a representative sample of 1,940 adults throughout the state. Information on the percent of the population participating in various activities were collected. These data are comparable to the other states that have been reviewed. The study claimed that when compared to a 1972 study, "tennis, bicycling, and other strenuous activities have enjoyed the greatest increase in popularity."

Utah

The Utah Outdoor Recreation Agency conducted a study in 1976-1977 using a "Mail-back Diary Questionnaire". Questionnaires were sent to 13,000 households containing 36,000 individuals eight years old and older. A random telephone sample was done of those households failing to respond. When compared to other states reporting per capita activity occasions, Utah rates were in the average to low average range. When residents were asked what prevented them from doing their favorite activity, 53.4 percent cited lack of time. This was almost twice the rate given for any other reason; 28.9 percent cited lack of money, and 23.8 percent reported facilities were too crowded.

Washington

The 1975-76 outdoor recreation survey was conducted through random sample telephone interviews. Residents consentious to be interviewed were then mailed four seasonal questionnaires. Only those households returning all four questionnaires and responding to the telephone interview were used for anlaysis purposes. Total activity occasions (calculated using U.S. Census Bureau population figures to obtain per capita rates for this report) and percent participation rates were reported for the population. When compared to the other states reviewed, the percent of Washington residents participating in various activities is generally below average. Per capita activity occasions were more comparable to other states, but still on the low side. No satisfactory reason for these discrepancies has been uncovered. Washington was also unusual in that weather was cited more often (31.4%) than lack of time (29.2 percent) as a hinderance to exercise and sports participation.

Conclusions

Methodologies used for the recreational survey varied a great deal. Combinations of mail and telephone interviewing techniques were used, and there was no standardization of questionnaires used by the different states.

Data from the recreational surveys were similar to the national and CDC surveys in reporting the preferred activities. The same activities were at the head of all the lists (when activities such as camping, boating, etc. were eliminated from the recreational surveys). Percent participation rates in selected activities, although varied, tended to be comparable among the states.

EXHIBIT C-1

PERCENT PERSONS PARTICIPATING IN SELECTED ACTIVITES FROM SEVEN STATE SURVEYS

Top Nine Activities	Arizona '77	Florida '75	Illinois '77	Indiana '76	Maryland '78	Nebraska '78	Wash. '76
Swimming	30	70.9[1]	34.3[2]	38.1	43	45.1	13.2
Hiking	18	26.8	26.6	33.7	15.7	22.3	16.6[3]
Walking	N/A	N/A	N/A	N/A	40.5	N/A	N/A
Jogging/ Running	19	N/A	N/A	N/A	6.6	N/A	4.0
Tennis	19	20.8	N/A	16.1	30.7	17.8	9.4
Bicycling	31	38.9	14.2	30.6	35.7	33.4	6.9
Softball	20	16.4	N/A	N/A	23.9	17.7	N/A
Calisthenics	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Basketball	N/A	11.1	N/A	N/A	N/A	N/A	N/A

[1] Ocean Swimming - Pool Swimming = 35.6%

[2] Pool Swiming - Lake Swimming = 29.2%

[3] Reported As Hiking/Walking

N/A - Indicates data are not available.

EXHIBIT C-2

PER CAPITA PARTICIPANTS FOR TEN SELECTED ACTIVITIES PER YEAR FROM FOUR STATE SURVEYS

Activity	Washington 1976	Kentucky 1977	Utah 1978	Michigan 1979
Swimming	2.89	5.97	2.81	11.3
Walking	2.14	--	1.99	3.2
Hiking	2.14	1.72	1.55	1.08
Bicycling	1.93	12.13	4.19	9.82
Tennis	1.65	3.40	1.92	--
Jogging	1.24	--	1.72	1.18
Basketball	--	3.39	2.19	--
Exercise	--	--	1.05	--
Softball	--	--	.48	--

APPENDIX D

APPENDIX D

SURVEY INSTRUMENTS WHICH WILL PROVIDE FUTURE INFORMATION ON PHYSICAL FITNESS TOPICS

This appendix contains survey instruments, i.e., the actual questionnaires, which are expected to be providing additional information on physical fitness topics in the near future. In some cases, the surveys will soon be conducted. In other cases, the surveys already have collected information but not published the results. Furthermore, some of the surveys ask only a few questions about physical fitness or exercise while others focus entirely on sports and exercise participation. The seven surveys from which future fitness-related information is expected are:

- A longitudinal study by the Institute for Aerobics Research on the relationship between aerobic exercise and health
- Behavioral Risk Factor Survey by the Centers for Disease Control (DHHS)
- Health Insurance Study by the Rand Corporation
- Second National Health and Nutrition Examination Survey by the National Center for Health Statistics (DHHS)
- Wave II of the National Survey of Personal Health Practices and Consequences by the National Center for Health Statistics (DHHS)
- Canada Fitness Survey by Fitness Canada (Government of Canada).
- National Recreation Survey by the National Park Service.
- National Hispanic Health Promotion Survey
- National Urban League Health Promotion Questionnaire
- NCAA Sports and Recreation Programs Survey

A LONGITIDUNAL STUDY BY THE INSTITUTE FOR AEROBICS RESEARCH ON THE RELATIONSHIP BETWEEN AEROBIC EXERCISE AND HEALTH

THE RELATIONSHIP BETWEEN AEROBIC EXERCISE AND HEALTH: THE AEROBICS CENTER LONGITUDINAL STUDY

This survey of all Cooper Clinic patients is part of the longitudinal study on exercise and health conducted by the Institute for Aerobics Research. This is a unique opportunity to help determine the beneficial effects of aerobic exercise. Most individuals find that the questionnaire can be completed in approximately 10 minutes. Please answer the questions to the best of your ability and be as complete as possible.

If you wish to comment on any of the questions or to qualify your answers, please write in the margins. Your comments are welcome and will be taken into account.

It is very important that we have replies from as many individuals as possible. Your responses are important to us. Please return the completed questionnaire today. We want to hear from you even if you are not currently following a regular exercise program.

Thank you for your help.

Institute for Aerobics Research
12200 Preston Road
Dallas, Texas 75230

EXERCISE

In this section we would like to ask you several questions about your current exercise habits. Please answer as accurately as possible. Circle your answers or supply a specific number when asked (only one answer per question).

1. How do you rate the physical activity that you are now getting compared to others your same age and sex? Think about both your leisure and work activities (please circle your response).

1. EXTREMELY INACTIVE	5. SOMEWHAT ACTIVE
2. INACTIVE	6. ACTIVE
3. SOMEWHAT INACTIVE	7. EXTREMELY ACTIVE
4. ABOUT AVERAGE	

2. For the *last three months*, which of the following activities have you performed regularly? (Please circle YES for all that apply and NO if you do not perform the activity; provide an estimate of the amount of activity for all marked YES. Please be as complete as possible.)

Play strenuous racquet sports (singles tennis, paddleball, etc.).
YES ⟶ hours per week ______
NO

Play other strenuous sports (basketball, soccer, or other sports involving running).
YES ⟶ hours per week ______
NO

Ride a bicycle.
YES ⟶ miles per week ______
NO

Swim.
YES ⟶ miles per week. ______
NO

3. How many times a week do you engage in vigorous physical activity long enough to work up a sweat?

________________/times per week

4. Do you follow the Aerobics exercise point program?
YES ⟶ On the average, how many Aerobic points did you earn per week during the last year? ____________
NO ↓ How many Aerobic points did you earn last week? ______
In what year did you start the Aerobics program? ______

5. Do you walk, run, or jog in your physical activity program? (Please be complete.)

YES ⟶ How many workouts per week? ________

NO ↓ How many miles do you average per workout? ________

What is your average time per mile? ________ : ________
(min) (sec)

6. During the last *seven* days, how much total time did you spend doing VIGOROUS physical activity and MODERATE physical activity? Record only time actually engaged in the activity (ignore breaks, rest periods, etc.). Please do not record any LIGHT physical activity (office work, light housework, very light sports such as bowling, or any activities involving sitting).

	Total hours for last 7 days to nearest .5 hours
VIGOROUS ACTIVITY (jogging or running, swimming, strenuous sports such as singles tennis or racquetball, digging in the garden, chopping wood, brisk walking, etc.)	________
MODERATE ACTIVITY (sports such as golf or doubles tennis, yard work, heavy housecleaning, bicycling on level ground, etc.)	________

7. Compared to a year ago, how much regular physical exercise do you currently get?

1. MUCH LESS
2. SOMEWHAT LESS
3. ABOUT THE SAME
4. SOMEWHAT MORE
5. MUCH MORE

YOUR HABITS

In this section we would like to find out about some of your health habits. (Please circle your answers or supply a number when asked.)

8. Do you currently drink coffee?

YES ⟶ On the average, how many cups of coffee do you drink a day?

NO ↓

________ cups/day regular coffee

________ cups/day decaffeinated

9. Do you currently drink tea?

YES ⟶ On the average, how many cups (or glasses) of tea do you drink a day?

NO ↓

________ cups (or glasses) a day of regular tea

________ cups (or glasses) a day of decaffeinated or herbal tea

10. Do you restrict the amount of salt you eat?

YES
SOMEWHAT
NO

THE Granville CORPORATION

11. What is your current smoking status? (Please circle all that apply.)

I HAVE NEVER SMOKED ON A DAILY BASIS.
I NOW SMOKE CIGARETTES, AND I SMOKE ______ CIGARETTES PER DAY.
I NOW SMOKE A PIPE, CIGARS, OR CIGARELLOS.
I AM NOW AN EX-SMOKER. I QUIT SMOKING IN ______ ______
month year

12. Do you currently drink alcoholic beverages?

YES ⟶ Since people who drink alcoholic beverages may not do so every day, please tell us how many drinks you usually have in a week.
NO ↓

WINE (1 glass = 4 oz.)
______ glasses per week
SPIRITS OR HARD LIQUOR (1 drink = 1½ oz.)
______ drinks per week
BEER (1 bottle or can = 12 oz.)
______ bottles or cans per week

What is the pattern of your weekly alcohol intake? (Please circle your answer.)
SPREAD OVER THE WEEK
CONSUMED MOSTLY IN ONE OR TWO DAYS

13. What percentage of the time do you wear seat belts and/or a shoulder strap while you are in a car?

1. 0-25%
2. 26-50%
3. 51-75%
4. 76-100%

14. How much time do you spend riding in a car each *week*?
______________ hours per week

15. How much time do you spend watching TV each *week*?
______________ hours per week

CURRENT HEALTH STATUS

In this section we want to know about your health status, past illnesses, and other health indicators.

16. How do you rate your overall health?

1. POOR
2. FAIR
3. GOOD
4. EXCELLENT

17. Please examine the following list of illnesses or conditions. If a doctor ever told you that you had the problem, circle YES and write in (as accurately as you can remember) the year in which the diagnosis was first made. Please circle your answer.

			Year of Onset
Myocardial infarction or heart attack	NO	YES	________
Angina pectoris	NO	YES	________
Abnormal ECG	NO	YES	________
Hypertension or high blood pressure	NO	YES	________
Stroke	NO	YES	________
Chronic bronchitis	NO	YES	________
Emphysema	NO	YES	________
Diabetes	NO	YES	________
Glaucoma	NO	YES	________
Alcoholism	NO	YES	________
Cancer (specify site: ________________)	NO	YES	________
Orthopedic problems			
Foot trouble	NO	YES	________
Knee trouble	NO	YES	________
Back trouble	NO	YES	________
Shoulder trouble	NO	YES	________
Elbow trouble	NO	YES	________
Hip trouble	NO	YES	________

May we contact your doctor for additional medical information?

Doctor's Name ____

Address ____

____

____

18. Have you had coronary angiography done?

YES ——→ What was the result? NORMAL

NO ↓ ABNORMAL

19. Have you had a coronary bypass operation?

YES

NO

20. How do you consider your current occupation in terms of stressfulness?

1. LOW
2. MODERATE
3. HIGH

21. How well motivated do you consider yourself to carry out activities or projects to completion? Please rate yourself on the following scale by circling your responses.
    1. POORLY MOTIVATED
    2. SOMEWHAT MOTIVATED, INCONSISTENT
    3. MODERATELY MOTIVATED, USUALLY DEPENDABLE
    4. WELL MOTIVATED, QUITE DEPENDABLE
    5. HIGHLY MOTIVATED, STRIVE TO EXCEL
22. How would you classify yourself on the following tension and anxiety scale?
    1. NO TENSION, VERY RELAXED
    2. SLIGHT TENSION
    3. MODERATE TENSION
    4. HIGH TENSION
    5. VERY TENSE, "HIGH STRUNG"
23. Please rate your general emotional outlook on life on the following scale by circling your responses.
    1. OFTEN DEPRESSED OR "DOWN IN DUMPS"
    2. GENERALLY SAD
    3. HAPPY AND SAD EQUAL AMOUNT
    4. GENERALLY HAPPY
    5. USUALLY ELATED
24. How often do you experience difficulty sleeping?
    1. NOT MORE THAN 1 OR 2 TIMES A YEAR
    2. ABOUT ONCE EVERY COUPLE OF MONTHS
    3. ABOUT ONCE OR TWICE A MONTH
    4. ABOUT ONCE A WEEK
    5. SEVERAL TIMES A WEEK
25. About how many days last year did you miss work or have your regular activities curtailed due to illness?

    __________ days missed

26. How many visits did you make to the doctor in the last year other than for a routine check-up?

    __________ doctor visits

27. What is your current body weight and your height?

    ________ pounds ________ inches

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28. Did you visit a dentist during the past year for preventive purposes or a regular check-up?

YES
NO

29. Were you hospitalized as an in-patient for at least one night during the last year?

YES → How many days did you spend in the hospital during the last year? ________________ days

NO ↓ What was the reason for your hospitalization? ________________

____

____

30. Do you regularly take any of the *prescribed* medicines listed below? (Please circle YES or NO for each medication listed.)

Medicine for heart pain (angina pectoris)	NO	YES
High blood pressure medicine	NO	YES
Heart rhythm medicine	NO	YES
Medicine for shortness of breath	NO	YES
Insulin	NO	YES

Other medicine (please specify): ________________________

____

FOR WOMEN ONLY:	Birth control pills	NO	YES
	Premarin or other estrogen	NO	YES
	Are you pregnant at this time?	NO	YES

DEMOGRAPHIC INFORMATION

Finally, in this last section we would like to ask you a few questions about yourself to help interpret the results and to maintain contact with you. *Your responses to these questions will be held completely confidential just like your medical data,* and this information will be used only for medical research purposes. Your address will not be given to any other group for any purpose.

31. What is your current marital status?

1. NEVER MARRIED
2. MARRIED
3. SEPARATED
4. DIVORCED
5. WIDOWED

32. Are you currently working, retired, or unemployed?

1. WORKING
2. RETIRED
3. UNEMPLOYED
4. KEEPING HOUSE
5. STUDENT

33. Please circle the highest educational level you have attained.
   1. HIGH SCHOOL OR LESS
   2. SOME COLLEGE
   3. COLLEGE GRADUATE
   4. MASTER'S DEGREE
   5. DOCTORAL DEGREE

34. What is your racial/ethnic identity?
   1. BLACK
   2. WHITE
   3. OTHER

35. What is your social security number?

___ ___ ___-___ ___-___ ___ ___ ___

36. What is your current telephone number?

(______) ____________
area code

37. Please give us the names, addresses, and telephone numbers of two people not in your household who will always know your whereabouts.

Name________________________	Name________________________
Address______________________	Address______________________
____________________________	____________________________
(______)____________________ area code	(______)____________________ area code

38. Is your name/address listed below correct? If not, please make the appropriate changes.

Any other comments you wish to make that you think may help us in continuing the Aerobics Center Longitudinal Study will be appreciated, either here or in a separate letter.

Although it will take several months to compile the results of this survey, we will be happy to send you a summary.

☐ Please check here if you wish to receive a summary.

Thank you very much for completing this survey. Your responses will be combined with others to provide useful and important information on exercise and health.

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BEHAVIORAL RISK FACTOR SURVEY BY THE CENTERS FOR DISEASE CONTROL (DHHS)

POINT G

Next, I'd like to ask you some questions about active physical exercise, exercise which makes you sweat or makes your heart beat fast.

- -

7. How often do you exercise or participate in an active physical sport, such as running, jogging, swimming, bicycling, etc.?

ONLY ONE ANSWER

DON'T READ LIST

(28-30)

PROBE FOR AVERAGE IF NECESSARY

A.	Number of times/week	1	___	___
	OR			
B.	Number of times/month.	2	___	___
C.	Less than once/month (Code=00) .	3	___	___
D.	Never, GO TO POINT H . . . . (Code = 88)	8	___	___
E.	Refused, GO TO POINT H . . . . . . (Code = 99)	9	___	___

EXAMPLE:
EVERYDAY /1/0/7/
2/WEEK /1/0/2/
3/MONTH /2/0/3/
LESS THAN 1/MONTH /3/0/0/
NEVER /8/8/8/
REFUSED /9/9/9/

- -

8. When you exercise or participate in a physical sport, do you usually keep at it?

(31)

READ LIST

IF IT VARIES — PROBE FOR AVERAGE

A.	1 hour or more	1
B.	45 minutes	2
C.	30 minutes	3
D.	15 minutes or less	4
E.	Refused	9

- -

9. What is your primary form of active physical exercise?

DON'T READ LIST

(32)

ONE ANSWER ONLY

A.	Running, jogging/fast walking	1
B.	Calisthenics	2
C.	Swimming	3
D.	Bicycling	4
E.	Hiking	5
F.	Tennis	6
G.	Team sport (soccer, ... basketball, football, etc.)	7
H.	Other ________________ . . . . Specify	8
I.	Refused	9

POINT H

The next two (2) questions are about your recreation, job or daily activities, and the level of effort related to these activities

10. Which of the following best describes the level of physical effort in your work or daily activities?

(33)

READ LIST

A.	Light -- such as office work, driving, sitting	1
B.	Moderate -- such as housework, carpentry, walking	2
C.	Heavy -- such as pushing or carrying heavy objects	3
D.	Undetermined	7
E.	Refused	9

11. How often do you participate in light physical recreation or hobbies such as dancing, gardening, golfing, bowling, etc.?

DON'T READ LIST

(34-36)

ONLY ONE ANSWER

PROBE FOR AVERAGE IF NECESSARY

EXAMPLE:
3/WEEK /1/0/3/
1/MONTH /2/0/1/
LESS THAN 1/MONTH /3/0/0/
NEVER /8/8/8/
REFUSED /9/9/9/ ___

A. Number of times/week . . . . . . 1 ___ ___
OR
B. Number of times/month . . . . . 2 ___ ___
C. Less than once a month . . . . . 3 ___ ___
(Code = 00)
D. Never (Code = 88) . . . . 8 ___ ___
E. Refused (Code = 99) . . . . . . 9 ___ ___

HEALTH INSURANCE STUDY BY THE RAND CORPORATION

SLEEP AND EXERCISE

28. IN AN AVERAGE 24 HOUR PERIOD, ABOUT HOW MANY HOURS DO YOU SPEND SLEEPING?

	(Circle one)
6 hours or less	1
7 hours	2
8 hours	3
9 hours or more	4

---

29. HAS ANY DOCTOR RECENTLY SUGGESTED THAT YOU GET MORE EXERCISE OR PRACTICE CERTAIN EXERCISES?

Yes	1	*—Answer 29-A-B*
No	2	*—Go to 30, next page*

29-A. WHAT IS THE REASON FOR THIS EXERCISE? (Circle one number on each line.)

	Yes	No
To improve your general health	1	2
To improve your athletic ability	1	2
To prevent heart disease	1	2
To lose weight	1	2
Treatment for sprain, sore muscle or broken bone	1	2
Treatment of arthritis	1	2
Some other reason	1	2

What? ______________________________

29-B. HOW OFTEN DO YOU DO THE EXERCISE THE DOCTOR SUGGESTED?

	(Circle one)
Always, never miss	1
Most of the time	2
About half the time	3
Less than half the time	4
Never, don't do it at all	5

30. SOME PEOPLE, IN THEIR JOBS OR IN THEIR WORK AROUND THE HOUSE, HAVE TO SPEND A GREAT DEAL OF TIME DOING HEAVY OR STRENUOUS WORK — LIKE LIFTING OR CARRYING HEAVY LOADS, PUSHING OR SCRUBBING THINGS, OR HANDLING HEAVY MACHINERY. OTHER PEOPLE DON'T DO ANY STRENUOUS WORK AT ALL.

IN YOUR JOB, OR IN YOUR WORK AROUND THE HOUSE, ABOUT HOW MANY HOURS DO YOU SPEND DOING HEAVY OR STRENUOUS WORK IN AN AVERAGE WEEK?

(Circle one)

None, don't do any heavy work	1
1 hour or less	2
2 to 3 hours a week	3
4 to 5 hours a week	4
6 to 10 hours a week	5
More than 10 hours a week	6

---

31. THEN THERE ARE JOBS OR HOUSEHOLD TASKS THAT REQUIRE A MEDIUM AMOUNT OF PHYSICAL ACTIVITY — LIKE BEING ON YOUR FEET QUITE A BIT, STOOPING, BENDING, LIFTING OR CARRYING LIGHTER LOADS, HANDLING LIGHTER TOOLS OR MACHINERY, OR IRONING CLOTHES.

IN YOUR JOB, OR IN YOUR WORK AROUND THE HOUSE, ABOUT HOW MANY HOURS DO YOU SPEND DOING THINGS THAT TAKE A MEDIUM AMOUNT OF PHYSICAL ACTIVITY IN AN AVERAGE WEEK?

(Circle one)

None, don't do any medium work	1
2 hours or less	2
3 to 5 hours a week	3
6 to 10 hours a week	4
11 to 15 hours a week	5
More than 15 hours a week	6

---

32. IN THEIR RECREATION OR LEISURE ACTIVITIES, SOME PEOPLE SPEND A LOT OF TIME IN STRENUOUS ACTIVITY — LIKE JOGGING, OR RUNNING, PLAYING HANDBALL OR TENNIS, VIGOROUS SWIMMING, CLIMBING, HIKING, OR DOING HEAVY WORK AROUND THE HOUSE. OTHER PEOPLE DON'T ENGAGE IN THIS KIND OF STRENUOUS ACTIVITY AT ALL.

ABOUT HOW MANY HOURS DO YOU SPEND, IN AN AVERAGE WEEK, IN STRENUOUS LEISURE TIME ACTIVITIES LIKE THESE?

(Circle one)

None, don't do strenuous activity	1
1 hour or less	2
2 to 3 hours a week	3
4 to 5 hours a week	4
6 to 10 hours a week	5
More than 10 hours a week	6

33. THEN THERE ARE LEISURE ACTIVITIES THAT REQUIRE A MEDIUM OR MODERATE AMOUNT OF PHYSICAL ACTIVITY — LIKE DANCING, PLAYING GOLF, GARDENING, OR WORKING WITH HOME TOOLS.

ABOUT HOW MANY HOURS DO YOU SPEND, IN AN AVERAGE WEEK, IN MEDIUM OR MODERATE LEISURE TIME ACTIVITIES LIKE THESE?

	(Circle one)
None, don't do medium activity	1
2 hours or less	2
3 to 5 hours a week	3
6 to 10 hours a week	4
11 to 15 hours a week	5
More than 15 hours a week	6

34. WHICH ONE OF THESE STATEMENTS BEST DESCRIBES YOUR PHYSICAL ACTIVITY, IN GENERAL?

	(Circle one)
Not very active physically, usually just sitting or walking	1
Fairly active physically, moderate or strenuous activity several times a week	2
Quite active physically, at least moderate activity every day	3
Extremely active physically, strenuous activity most days	4

SAFETY

35. DURING THE PAST 12 MONTHS, ABOUT HOW MANY MILES DID YOU DRIVE OR RIDE IN A CAR OR TRUCK?

	(Circle one)
None	1
2,000 miles or less	2
More than 2,000 to 5,000	3
More than 5,000 to 10,000	4
More than 10,000 to 15,000	5
More than 15,000 to 20,000	6
More than 20,000 miles	7

36. WHEN YOU RIDE IN A CAR OR TRUCK, HOW MUCH OF THE TIME DO YOU USE A SEAT BELT?

	(Circle one)
All of the time	1
Most of the time	2
Some of the time	3
A little of the time	4
None of the time	5
Never ride in car or truck	6

[illegible]. IF YOU WANTED TO, COULD YOU PARTICIPATE IN ACTIVE SPORTS SUCH AS SWIMMING, TENNIS, BASKETBALL, VOLLEYBALL, OR ROWING A BOAT?

Yes	1	*—Go to 237, page 69*
Yes, but only slowly	2	WHY?
No, I can't do this	3	WHY?

(Circle number for one main cause, then answer 227 through 236, pages 59-68)

Chronic bronchitis, emphysema or phlegm	01
Chest pain, heart attack, or angina	02
Overweight	03
High blood pressure (hypertension)	04
Anemia (low blood)	05
Shortness of breath, enlarged heart, or heart failure	06
Severe stomach pain or stomach ache (ulcer)	07
Kidney, bladder, or urine infection	08
Joint problems (arthritis, gout, rheumatism)	09
Cancer	10
Hernia, rupture, herniated navel	11
Varicose veins	12
Hemorrhoids	13
Goiter or thyroid trouble	14
Hay fever or other allergies to plants and grasses	15
Eyesight problems	16
Hearing problems	17
Diabetes or pre-diabetes (sugar in blood or sugar disease)	18
Cholesterol (high blood cholesterol)	19
Tuberculosis	20
Trouble with drinking	21
Some other problem (What? ______________________)	22

226. IF YOU WANTED TO, COULD YOU PARTICIPATE IN ACTIVE SPORTS SUCH AS SWIMMING, TENNIS, BASKETBALL, VOLLEYBALL, OR ROWING A BOAT?

Yes	1	*—Answer 227-236, pages 59-68*
Yes, but only slowly	2	WHY?
No, I can't do this	3	

(Circle number for one main cause, then answer 227 through 236, pages 59-68)

Chronic bronchitis, emphysema or phlegm	01
Chest pain, heart attack, or angina	02
Overweight	03
High blood pressure (hypertension)	04
Anemia (low blood)	05
Shortness of breath, enlarged heart, or heart failure	06
Severe stomach pain or stomach ache (ulcer)	07
Kidney, bladder, or urine infection	08
Joint problems (arthritis, gout, rheumatism)	09
Cancer	10
Hernia, rupture, herniated navel	11
Varicose veins	12
Hemorrhoids	13
Goiter or thyroid trouble	14
Hay fever or other allergies to plants and grasses	15
Eyesight problems	16
Hearing problems	17
Diabetes or pre-diabetes (sugar in blood or sugar disease)	18
Cholesterol (high blood cholesterol)	19
Tuberculosis	20
Trouble with drinking	21
Some other problem (What? ______________________)	22

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229. IF YOU WANTED TO, COULD YOU RUN A SHORT DISTANCE?

Yes	1
Yes, but only slowly	2
No, I can't do this	3

WHY?

(Circle number for one main cause; then answer 230 through 236, pages 62-68)

Chronic bronchitis, emphysema or phlegm	01
Chest pain, heart attack, or angina	02
Overweight	03
High blood pressure (hypertension)	04
Anemia (low blood)	05
Shortness of breath, enlarged heart, or heart failure	06
Severe stomach pain or stomach ache (ulcer)	07
Kidney, bladder, or urine infection	08
Joint problems (arthritis, gout, rheumatism)	09
Cancer	10
Hernia, rupture, herniated navel	11
Varicose veins	12
Hemorrhoids	13
Goiter or thyroid trouble	14
Hay fever or other allergies to plants and grasses	15
Eyesight problems	16
Hearing problems	17
Diabetes or pre-diabetes (sugar in blood or sugar disease)	18
Cholesterol (high blood cholesterol)	19
Tuberculosis	20
Trouble with drinking	21
Some other problem (What? ________)	22

SECOND NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY BY THE NATIONAL CENTER FOR HEALTH STATISTICS (DHHS)

THE Granville CORPORATION

21. Do you keep house or work around the house a good deal of the time?	(121)	1 ☐ Yes 2 ☐ No – Skip to question 23		
22. In your job (or housework) –		Most of the time	Some of the time	Hardly ever or never
a. How much of the time do you spend sitting down?	(122)	2 ☐	1 ☐	0 ☐
b. How much of the time do you spend walking or moving about?	(123)	2 ☐	1 ☐	0 ☐
c. How much of the time do you have to use lots of arm, leg, or back muscles as in lifting, pulling, carrying, digging, and so on?	(124)	2 ☐	1 ☐	0 ☐
23. Outside of your job or work around the house, how often do you –		Frequently	Sometimes	Hardly ever or never
a. Walk as much as a mile (8–9 blocks) a day in getting to and from work, stores, and so on?	(125)	2 ☐	1 ☐	0 ☐
b. Take hikes or walks in good weather?	(126)	2 ☐	1 ☐	0 ☐
c. Take part in activities which require a lot of body movement or energy, like ball games, cycling, dancing, and so on?	(127)	2 ☐	1 ☐	0 ☐
24. Do you follow a REGULAR program of physical exercise?	(128)	1 ☐ Yes 2 ☐ No		
25. On the average, about how many hours per week do you spend in moderately strenuous or strenuous activities requiring at least as much effort as the following examples: Climbing up or down stairs, walking fast, using a lawnmower, sawing wood, bicycling, dancing, or playing tennis?	(129)	0 ☐ Less than an hour ___ ___hours per week		
26. Filled out by –	(129)	1 ☐ Examinee 2 ☐ Interviewer 3 ☐ Both		

Notes

14a. Do you drink coffee?	(229) 1 ☐ Yes 2 ☐ No (14e)
b. On the average, how many cups or glasses a day do you drink?	(230) ______ Cups or glasses 0 ☐ Less than one per day
c. Do you usually drink decaffeinated coffee or regular coffee?	(231) 1 ☐ Decaffeinated 2 ☐ Regular 3 ☐ Both
d. Were you EVER advised by a doctor to use decaffeinated coffee? *(For example, Brim, Decaf, or Sanka)*	(232) 1 ☐ Yes 2 ☐ No
e. Have you EVER been advised by a doctor to stop drinking regular coffee?	(233) 1 ☐ Yes 2 ☐ No
15a. Do you drink tea?	(234) 1 ☐ Yes 2 ☐ No (15c)
b. On the average, how many cups or glasses a day do you drink?	(235) ______ Cups or glasses 0 ☐ Less than one per day
c. Have you EVER been advised by a doctor to stop drinking tea?	(236) 1 ☐ Yes 2 ☐ No
16a. During the past 6 months, did you use any aspirin or aspirin-type pills?	(237) 1 ☐ Yes 2 ☐ No (17)
b. On the average, do you use these pills one or more times per week?	(238) 1 ☐ Yes 2 ☐ No
17. In things you do for RECREATION, for example, sports, hiking, dancing, and so forth, do you get much exercise, moderate exercise, or little or no exercise?	(239) 1 ☐ Much exercise 2 ☐ Moderate exercise 3 ☐ Little or no exercise
18. In your usual day, ASIDE FROM RECREATION, are you physically very active, moderately active, or quite inactive?	(240) 1 ☐ Very active 2 ☐ Moderately active 3 ☐ Quite inactive
19a. What is the most that you have ever weighed? *(Do not include the times you were pregnant.)*	(241) ______ Pounds
b. How old were you then?	(242) ______ Years old

Notes

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WAVE II OF THE NATIONAL SURVEY OF PERSONAL HEALTH PRACTICES AND CONSEQUENCES BY THE NATIONAL CENTER FOR HEALTH STATISTICS (DHHS)

The next group of questions asks your personal opinions about health-related matters.

44. How good a job do you feel you are doing in taking care of your health? Would you say . . . (READ LIST)

41-

	Excellent	4
	Good	3
	Fair	2
	Poor	1
DO NOT READ	Don't Know	8

45. How would you compare your level of physical activity with other people your age? Would you say you are . . . (READ LIST)

42-

	Much more physically active	4
	Somewhat more active	3
	Somewhat less active	2
	Much less active	1
DO NOT READ	Don't Know	8

46. Compared to your level of physical activity two years ago, would you say you are now more physically active, less physically active, or about the same?

43-

	More physically active	1
	Less physically active	2
SKIP TO Q. 48	About the same	3

47. Is this because of a specific health-related problem or condition that you had?

44-

Yes	1
No	2

48. Do you feel that you get as much exercise as you need, or less than you need?

45-

As much as you need	1
Less than you need	2
Don't Know	8

49. In general, how satisfied are you with your overall physical condition? Would you say . . . (READ LIST)

46-

	Very satisfied	4
	Somewhat satisfied	3
	Not too satisfied	2
	Not at all satisfied	1
DO NOT READ	Don't Know	8

50. Compared with two years ago, that is, since 1977, would you say that your health is now better, worse, or about the same?

47-

Better	3
Worse	2
Same	1
Don't Know	8

51. Over the past year has your health caused you a great deal of worry, some worry, hardly any worry, or no worry at all?

48-

A great deal of worry	4
Some worry	3
Hardly any worry	2
No worry at all	1
Don't Know	8

CANADA FITNESS SURVEY BY FITNESS CANADA (GOVERNMENT OF CANADA)

THE Granville CORPORATION

PHYSICAL ACTIVITIES

WHAT YOU DO AT WORK OR AT SCHOOL OR IN THE HOME, PLUS YOUR ACTIVITY IN YOUR LEISURE TIME ALL CONTRIBUTE TO YOUR CURRENT LEVEL OF FITNESS. THE FOLLOWING QUESTIONS WILL PROVIDE A COMPLETE PICTURE OF ALL YOUR ACTIVITIES.

TO HELP YOU DESCRIBE YOUR ACTIVITIES, WE HAVE DESIGNED FOUR QUESTIONS — ONE FOR THOSE YOU DO DAILY, ONE FOR THOSE YOU DO EACH WEEK, ONE FOR THOSE YOU HAVE DONE IN THE LAST MONTH, AND THE FOURTH FOR THOSE ACTIVITIES YOU HAVE DONE IN THE LAST YEAR.

1. DAILY ACTIVITIES

For those activities which you do most days of the week (such as work, school and housework), how much time do you spend. . .

	Almost all of the time	About 3/4 of the time	About 1/2 of the time	About 1/4 of the time	Almost none of the time
Sitting	☐1	☐2	☐3	☐4	☐5
Standing	☐1	☐2	☐3	☐4	☐5
Walking	☐1	☐2	☐3	☐4	☐5
Walking up stairs	☐1	☐2	☐3	☐4	☐5
Lifting or carrying heavy objects	☐1	☐2	☐3	☐4	☐5

2. WEEKLY ACTIVITIES

Please refer to the reference card for a list of activities. Answer the following for the physical activities you do each week.

Light housework and handywork: washing dishes, ironing, making beds, mowing lawn, etc

Number of occasions each month: J F M A M J J A S O N D

Average time actually spent on each occasion: Hrs ☐ Mins ☐

Intensity: Light – Slight change from normal ☐1 Medium – Some perspiration Above normal breathing ☐2 Heavy – Heavy perspiration Heavy breathing ☐3

Heavy housework and handywork: washing and waxing floors, painting, etc

Number of occasions each month: J F M A M J J A S O N D

Average time actually spent on each occasion: Hrs ☐ Mins ☐

Intensity: Light – Slight change from normal ☐1 Medium – Some perspiration Above normal breathing ☐2 Heavy – Heavy perspiration Heavy breathing ☐3

Name of activity ________________ ☐

Number of occasions each month: J F M A M J J A S O N D

Average time: Hrs ☐ Mins ☐

Intensity: Light ☐1 Medium ☐2 Heavy ☐3

Organized in levels or in a league: Yes ☐1 No ☐2

Competitive: Yes ☐1 No ☐2

Name of activity ________________ ☐

Number of occasions each month: J F M A M J J A S O N D

Average time: Hrs ☐ Mins ☐

Intensity: Light ☐1 Medium ☐2 Heavy ☐3

Organized: Yes ☐1 No ☐2

Competitive: Yes ☐1 No ☐2

Name of activity ________________ ☐

Number of occasions each month: J F M A M J J A S O N D

Average time: Hrs ☐ Mins ☐

Intensity: Light ☐1 Medium ☐2 Heavy ☐3

Organized: Yes ☐1 No ☐2

Competitive: Yes ☐1 No ☐2

Name of activity ________________ ☐

Number of occasions each month: J F M A M J J A S O N D

Average time: Hrs ☐ Mins ☐

Intensity: Light ☐1 Medium ☐2 Heavy ☐3

Organized: Yes ☐1 No ☐2

Competitive: Yes ☐1 No ☐2

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3. ACTIVITIES IN THE LAST MONTH

Please refer to the reference card for a list of activities. Answer the following for the physical activities you have done at least once in the last month. (Do not include activities already listed in Weekly Activities.)

Gardening and cultivating such as spading, digging, weeding

Occasions in the last month ☐☐

Average time usually spent on each occasion: Hrs ☐ Mins ☐☐

Intensity: Light [illegible] ☐ 1 Medium [illegible] ☐ 2 Heavy [illegible] ☐ 3

Shovelling snow

Occasions in the last month ☐☐

Average time usually spent on each occasion: Hrs ☐ Mins ☐☐

Intensity: Light [illegible] ☐ 1 Medium [illegible] ☐ 2 Heavy [illegible] ☐ 3

Mowing the lawn (pushing a power mower)

Occasions in the last month ☐☐

Average time usually spent on each occasion: Hrs ☐ Mins ☐☐

Intensity: Light [illegible] ☐ 1 Medium [illegible] ☐ 2 Heavy [illegible] ☐ 3

Name of activity ____________________ ☐☐☐☐

Occasions in the last month ☐☐

Average time: Hrs ☐ Mins ☐☐

Intensity: Light ☐ 1 Medium ☐ 2 Heavy ☐ 3

Organized in teams or in a league: Yes ☐ 1 No ☐ 2

Competitive: Yes ☐ 1 No ☐ 2

Name of activity ____________________ ☐☐☐☐

Occasions in the last month ☐☐

Average time: Hrs ☐ Mins ☐☐

Intensity: Light ☐ 1 Medium ☐ 2 Heavy ☐ 3

Organized: Yes ☐ 1 No ☐ 2

Competitive: Yes ☐ 1 No ☐ 2

Name of activity ____________________ ☐☐☐☐

Occasions in the last month ☐☐

Average time: Hrs ☐ Mins ☐☐

Intensity: Light ☐ 1 Medium ☐ 2 Heavy ☐ 3

Organized: Yes ☐ 1 No ☐ 2

Competitive: Yes ☐ 1 No ☐ 2

Name of activity ____________________ ☐☐☐☐

Occasions in the last month ☐☐

Average time: Hrs ☐ Mins ☐☐

Intensity: Light ☐ 1 Medium ☐ 2 Heavy ☐ 3

Organized: Yes ☐ 1 No ☐ 2

Competitive: Yes ☐ 1 No ☐ 2

Name of activity ____________________ ☐☐☐☐

Occasions in the last month ☐☐

Average time: Hrs ☐ Mins ☐☐

Intensity: Light ☐ 1 Medium ☐ 2 Heavy ☐ 3

Organized: Yes ☐ 1 No ☐ 2

Competitive: Yes ☐ 1 No ☐ 2

Name of activity ____________________ ☐☐☐☐

Occasions in the last month ☐☐

Average time: Hrs ☐ Mins ☐☐

Intensity: Light ☐ 1 Medium ☐ 2 Heavy ☐ 3

Organized: Yes ☐ 1 No ☐ 2

Competitive: Yes ☐ 1 No ☐ 2

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4. ACTIVITIES IN THE LAST YEAR

Please refer to the reference card for a list of activities. Answer the following for the physical activities you have done in the last 12 months.

(Do not include activities you have already listed.)

	Months in which activity was done												Number of occasions in last 12 months	Average number of minutes spent on each occasion			
	J	F	M	A	M	J	J	A	S	O	N	D		15 or less	16 to 20	21 to 60	61 or more
Walking for exercise	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Jogging (using short strides)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Running (using long strides)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Bicycling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Home exercises (push-ups, sit-ups)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Exercise classes	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Weight training	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Yoga	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Golf (walking and carrying clubs)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Racquetball	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Squash	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Tennis	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Baseball	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Softball	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Ice hockey	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Curling	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Swimming at a pool	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Cross country skiing	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Alpine/Downhill skiing	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Ice skating	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
Names of activities:																	
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		☐	☐	☐	☐

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PHYSICAL ACTIVITY IN YOUR LEISURE TIME

5. Here is a list of reasons why some people do physical activities during their leisure time. How important is each of these to you?

	Very important	Of some importance	Of little importance	Of no importance
To feel better mentally and physically	☐ 1	☐ 2	☐ 3	☐ 4
To be with other people	☐ 1	☐ 2	☐ 3	☐ 4
For pleasure, fun or excitement	☐ 1	☐ 2	☐ 3	☐ 4
To control weight or to look better	☐ 1	☐ 2	☐ 3	☐ 4
To move better or to improve flexibility	☐ 1	☐ 2	☐ 3	☐ 4
As a challenge to my abilities	☐ 1	☐ 2	☐ 3	☐ 4
To relax or reduce stress	☐ 1	☐ 2	☐ 3	☐ 4
To learn new things	☐ 1	☐ 2	☐ 3	☐ 4
Because of fitness specialist's advice for improving health in general	☐ 1	☐ 2	☐ 3	☐ 4
Because of doctor's orders for therapy or rehabilitation	☐ 1	☐ 2	☐ 3	☐ 4
Other	☐ 1	☐ 2	☐ 3	☐ 4

6. With whom do you *usually* do your physical activities in your leisure time?

☐ No one ☐ Friends ☐ Immediate family or relatives

☐ Co-workers ☐ Classmates at school ☐ Others

7. When do you *usually* do your physical activities? (Indicate one only.)

☐ 1 Weekdays ☐ 2 Weekends ☐ 3 Both

8. At what time do you *usually* do your physical activities? (Indicate more than one if you usually do activities *more than once a day.*)

☐ In the morning ☐ At lunchtime ☐ In the afternoon

☐ In the evening ☐ At no special time

9. Where do you *usually* do your physical activities? (Indicate one or more.)

☐ Home ☐ Work ☐ School, college or university facility

☐ Park ☐ Recreational facility ☐ Other

☐ Commercial facility or private club ☐ Outside using no special facility

10. How long have you been doing some physical activity in your leisure time at least once a week?

☐ I don't do an activity each week ☐ For less than 3 months ☐ From 3 months to just under 6 months ☐ From 6 months to just under 1 year

☐ From 1 year to just under 3 years ☐ From 3 years to just under 5 years ☐ Five or more years

11. Comparing yourself to others of your own age and sex, would you say you are. . . .

☐ 1 More fit ☐ 2 Less fit ☐ 3 As fit

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12. If you want to participate more in physical activities than you do now, why aren't you able to? (Check at most 3 reasons.)

☐ I don't want to participate more
☐ Ill health
☐ Injury or handicap
☐ Lack of energy
☐ Lack of time because of work (school)
☐ Lack of time because of other leisure activities
☐ Costs too much

☐ No facilities nearby
☐ Available facilities are inadequate
☐ No leaders available
☐ Requires too much self-discipline
☐ Lack the necessary skills
☐ Other ______________________

____

13. If you wanted to participate more in physical activities, which of the following would increase the amount of physical activity you do? (Check at most 3.)

☐ Nothing
☐ Better or closer facilities
☐ Different facilities
☐ Less expensive facilities
☐ More information on the benefits of doing physical activity
☐ Employer or union sponsored activities available
☐ Organized sports available
☐ Organized fitness classes available

☐ Fitness test with personal activity program available
☐ People with whom to participate
☐ Common interest of family
☐ Common interest of friends
☐ More leisure time
☐ Other ______________________

____

____

14. Which of the following have you heard of?

☐ Canadian Home Fitness Test
☐ Canada Games
☐ Canada Fitness Awards
☐ FIT KIT
☐ INFORMaction
☐ PARTICIPaction

☐ Standardized Test of Fitness
☐ Fitness and Amateur Sport
☐ Fitness Canada
☐ 5BX/10BX
☐ Exercise [illegible]
☐ Canada Fitness [illegible]

15. What is the name of your provincial fitness program?

☐ No provincial program
☐ Don't know

Name of program:
____

Office Use
|__|__|

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PARTICIPaction

16. Have you ever seen this symbol?

☐ 1 Yes
☐ 2 No — Go to question 17
☐ 3 Not Sure — Go to question 17

Where have you heard of or seen the PARTICIPaction symbol or message? (Indicate all applicable.)

☐ On television
☐ In magazines
☐ On posters
☐ On T shirts
☐ In "Fitness: The Facts"
☐ On radio
☐ In booklets or pamphlets
☐ On buses or subways
☐ At school
☐ Stamps/Stickers, etc.
☐ In newspapers
☐ On billboards
☐ On milk cartons
☐ At Fairs/Parks
☐ Don't know

17. Have you previously taken a physical fitness test?

☐ 1 Yes
☐ 2 No — Go to question 18
☐ 3 Don't know — Go to question 18

What type of cardio-vascular (aerobic) exercise did this test use?

☐ 1 Stepping
☐ 2 Treadmill
☐ 3 Walk/Jog/Run
☐ 4 Bicycle
☐ 5 Other ________________________

Where did you take this fitness test?

☐ 1 YMCA/YWCA
☐ 2 Commercial club or facility
☐ 3 University
☐ 4 Work or school
☐ 5 Other ________________________

When did you take this test?

☐ 1 In the last 6 months
☐ 2 From 6 months to 1 year ago
☐ 3 Over 1 year ago

Were you satisfied with the way the test was explained and administered?

☐ 1 Very satisfied
☐ 2 Satisfied
☐ 3 Not at all satisfied

Has taking the fitness test increased the amount of physical activity you do?

☐ 1 Yes
☐ 2 No
☐ 3 Don't know

18. In the past year, what physical activities have you stopped doing?
(*Do not include those stopped due to a change in the season.*)

☐ 1 None or Activity ________________________ Office Use ☐☐☐
Why did you stop doing this activity? ________________________ Office Use ☐☐☐
Activity ________________________ Office Use ☐☐☐
Why did you stop doing this activity? ________________________ Office Use ☐☐☐

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19. What physical activities would you like to start in order to improve your fitness and health?

☐ None or Activity ____________________ Office Use ☐☐☐

What is the main reason you have not yet started this? ____________________ Office Use ☐☐☐

Activity ____________________ Office Use ☐☐☐

What is the main reason you have not yet started this? ____________________ Office Use ☐☐☐

Activity ____________________ Office Use ☐☐☐

What is the main reason you have not yet started this? ____________________ Office Use ☐☐☐

20. How important are each of the following to you in gaining a feeling of well being?

	Very Important	Of some Importance	Of little Importance	Of no Importance
Adequate rest and sleep	☐1	☐2	☐3	☐4
A good diet	☐1	☐2	☐3	☐4
Low calorie snacks between meals	☐1	☐2	☐3	☐4
Maintenance of proper weight	☐1	☐2	☐3	☐4
Participation in social and cultural activities	☐1	☐2	☐3	☐4
Control of stress	☐1	☐2	☐3	☐4
Regular physical activity such as exercise, sports or games	☐1	☐2	☐3	☐4
Using alcohol moderately or being a non-drinker	☐1	☐2	☐3	☐4
Being a non-smoker	☐1	☐2	☐3	☐4
Adequate medical and dental care	☐1	☐2	☐3	☐4
Positive thinking/meditation	☐1	☐2	☐3	☐4

LIFESTYLE AND YOUR HEALTH

21. What do you *usually* eat for breakfast? (*Usually means at least four days a week.*) Check all that apply.

- ☐ I don't eat breakfast
- ☐ Eggs
- ☐ Bacon or other meat, fish or poultry
- ☐ Bread, danish or donut
- ☐ Granola
- ☐ Other cereals
- ☐ Fruit or fruit juice
- ☐ At least 6 ounces of milk
- ☐ Cheese
- ☐ Yogurt
- ☐ Tea or coffee

22. In the last year, have you been eating . . .

sweet foods and candies	☐1 More	☐2 Less	☐3 Same amount as before
fruit and vegetables	☐1 More	☐2 Less	☐3 Same amount as before
fats and fried foods	☐1 More	☐2 Less	☐3 Same amount as before
salt and salty food	☐1 More	☐2 Less	☐3 Same amount as before
meals on a regular basis	☐1 More	☐2 Less	☐3 Same amount as before
the same amount of food or calories	☐1 No, more	☐2 No, less	☐3 Same amount as before

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23. About how often do you *usually* drink alcohol?

- ☐ More than once a day
- ☐ 4 to 7 times a week
- ☐ 1 to 3 times a week
- ☐ 1 to 3 times a month
- ☐ Less than once a month
- ☐ I don't drink alcohol — Go to question 24

About how many drinks do you usually have at a time?

Where one drink is: — one pint of beer — 12 ounces
— one small glass of wine
— one shot of liquor or spirits
i.e. 1 - 1 1/2 ounces with or without mix.

- ☐ One
- ☐ Two or three
- ☐ Four or five
- ☐ Six or seven
- ☐ Eight or more

24. Which of the following best describes your experience with tobacco. Check all that apply.

☐ I haven't smoked

I currently smoke:
- ☐ cigarettes occasionally
- ☐ less than 1/2 pack of cigarettes daily
- ☐ about a pack of cigarettes daily
- ☐ two or more packs of cigarettes daily
- ☐ a pipe, cigar or cigarillo occasionally
- ☐ a pipe, cigar or cigarillo daily

I stopped smoking:
- ☐ cigarettes recently
- ☐ cigarettes over a year ago
- ☐ a pipe, cigars or cigarillos recently
- ☐ a pipe, cigars or cigarillos over a year ago

25. Here is a list that describes some of the ways people feel at different times. During the past few weeks, how often have you felt . . .

	Often	Sometimes	Never
On top of the world?	☐	☐	☐
Very lonely or remote from other people?	☐	☐	☐
Particularly excited or interested in something?	☐	☐	☐
Depressed or very unhappy?	☐	☐	☐
Pleased about having accomplished something?	☐	☐	☐
Bored?	☐	☐	☐
Proud because someone complimented you on something you had done?	☐	☐	☐
So restless you couldn't sit long in a chair?	☐	☐	☐
That things were going your way?	☐	☐	☐
Upset because someone criticized you?	☐	☐	☐

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26. About how many hours of sleep do you *usually* get each day?

- ☐ 1 Six hours or less
- ☐ 2 Seven
- ☐ 3 Eight
- ☐ 4 Nine
- ☐ 5 Ten
- ☐ 6 Eleven hours or more

27. Are you limited in the *type* or *amount* of work you can do (or school you can attend) because of an illness, injury or handicap?

- ☐ 1 No
- ☐ 2 Yes, because of a temporary illness
- ☐ 3 Yes, because of a chronic or long-term illness
- ☐ 4 Yes, because of a temporary injury
- ☐ 5 Yes, because of a permanent injury or handicap

28. Are you limited in the *type* or *amount* of physical activity you can do during your leisure time because of an illness, injury or handicap?

- ☐ 1 No
- ☐ 2 Yes, because of a temporary illness
- ☐ 3 Yes, because of a chronic or long-term illness
- ☐ 4 Yes, because of a temporary injury
- ☐ 5 Yes, because of a permanent injury or handicap

29. In general, how would you describe your state of health?

- ☐ 1 Very good
- ☐ 2 Good
- ☐ 3 Average
- ☐ 4 Poor
- ☐ 5 Very Poor

SOME FACTS ABOUT YOU

30. Were you born in Canada?

- ☐ 1 Yes
- ☐ 2 No

31. What language do you use all or most of the time? Check one only.

- ☐ 1 English
- ☐ 2 French
- ☐ 3 German
- ☐ 4 Italian
- ☐ 5 Ukrainian
- ☐ 6 Other ____________________

32. Is there another language that you are in the habit of using?

- ☐ 1 None
- ☐ 2 English
- ☐ 3 French
- ☐ 4 German
- ☐ 5 Italian
- ☐ 6 Ukrainian
- ☐ 7 Other ____________________

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33. Are you . . .

☐ Male

☐ Female

34. How old are you?

☐ Years

IF YOU ARE 14 YEARS OF AGE OR YOUNGER,
YOU HAVE FINISHED THE QUESTIONNAIRE.

THANK YOU!

WE WOULD BE GRATEFUL FOR YOUR COMMENTS.
A SPACE FOR THIS HAS BEEN LEFT ON THE LAST PAGE.

IF YOU ARE 15 YEARS OF AGE OR OLDER, . . .

35. What is your present marital status? Are you presently . . .

☐ Married

☐ Widowed

☐ Divorced

☐ Separated

☐ Single (never married)

36. What is the highest level of education you have reached?

☐ Elementary or less

☐ Some secondary

☐ Secondary diploma

☐ Some post-secondary

☐ Post-secondary diploma or certificate

☐ Community college or CEGEP diploma

☐ One or more University degrees

37. Are you . . . (Check all that apply.)

☐ Retired

☐ Employed full-time

☐ Employed part-time

☐ Student full-time

☐ Student part-time

☐ Homemaker/Housewife full-time

☐ Homemaker/Housewife part-time

☐ Unemployed or on strike

☐ Other ________________

38. How many hours a week do you spend doing your main activity? (work, going to school, housework)

☐ Hours

39. How many hours a week do you spend doing other chores?

☐ Hours

40. How many hours a week do you have for doing leisure activities?

☐ Hours

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41. Have you worked or had a job in the past 2 weeks?

☐ 1 Yes ☐ 2 No – Go to question 43

What kind of work do you do? (eg. posting invoices, selling shoes, etc.) Please provide as much detail as possible.

For whom do you work? (Name of business, government department, agency, person, or are you self employed?)

What kind of business, industry or service is this? (eg. paper box manufacturing, retail shoe store, municipal board of education.)

42. Is there an opportunity for physical recreation where you work?

- ☐ 1 Yes, at lunch
- ☐ 2 Yes, at coffee break
- ☐ 3 Yes, after work
- ☐ 4 No

43. Approximately what was your family's total income last year, before taxes?

- ☐ 1 Less than $6,000
- ☐ 2 $6,000 to $9,999
- ☐ 3 $10,000 to 14,999
- ☐ 4 $15,000 to $24,999
- ☐ 5 $25,000 to $29,999
- ☐ 6 $30,000 to $35,000
- ☐ 7 Over $35,000
- ☐ 8 Don't know

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Canada Fitness Survey
Enquête condition physique Canada

Supplementary Health Questions

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1. [illegible]	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
2. [illegible]	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
3. [illegible]	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
4. [illegible]	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
5. [illegible] 6. [illegible]	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
7. [illegible]	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
8. [illegible]	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
9. [illegible]	☐	☐	☐	☐	☐	☐
10. [illegible]	Yes No	Yes No	Yes No	Yes No	Yes No	Yes No
11. Age						
12. Sex	M F	M F	M F	M F	M F	M F
13. [illegible]						

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STATION 2 (Con't)

BLOOD PRESSURE

Assure 5 minute rest period with no postural change prior to measurement.

Child cuff	☐ 1
Adult cuff	☐ 2
Large cuff	☐ 3
Resting heart rate	└─┴─┴─┘
Systolic	└─┴─┴─┘
Diastolic	└─┴─┴─┘
Refused	☐ 1
Unable to obtain	☐ 2

If resting heart rate is greater than 100, or systolic is greater than 150 or diastolic is greater than 100, have respondent rest 5 minutes and then repeat measurements.

Resting heart rate	└─┴─┴─┘	☐
Systolic	└─┴─┴─┘	☐
Diastolic	└─┴─┴─┘	☐
Refused		☐ 1
Unable to obtain		☐ 2

ACTIVITIES OF DAILY LIVING

If one or more boxes in the right hand column under PAR Q, OBSERVATION or BLOOD PRESSURE has been checked, ask the following questions.
DO NOT COMPLETE STATION 2 OR 3

	With no difficulty	With some difficulty	With much difficulty	Not at all
Can you run 100 yards?	☐ 1	☐ 2	☐ 3	☐ 4
Can you walk 200 yards without resting?	☐	☐	☐	☐
Can you walk up or down one flight of stairs (8 steps) without resting?	☐	☐	☐	☐
Can you get in and out of bed?	☐	☐	☐	☐
Can you, when standing, bend down and pick up a shoe from the floor?	☐	☐	☐	☐
Can you carry an object of 10 pounds for 10 yards?	☐	☐	☐	☐
Can you cut your own food (such as meat, fruit, etc.)?	☐	☐	☐	☐
Can you get dressed by yourself?	☐	☐	☐	☐

ADULT DATA CARD

STEP TEST

Temperature		└─┴─┘°
Refused		☐
Pulse	1st	└─┴─┘
	2nd	└─┴─┘
	3rd	└─┴─┘

If exercise was interrupted or discontinued, specify reason

└─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘

└─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘

Test stage		└─┘
Systolic		└─┴─┴─┘
Diastolic		└─┴─┴─┘
Refused		☐ 1
Unable to obtain		☐ 2
Systolic		└─┴─┴─┘
Diastolic		└─┴─┴─┘
Refused		☐ 1
Unable to obtain		☐ 2
Heart rate	110	└─┴─┘

STATION 3

GRIP STRENGTH

Right hand 1st	111	└─┴─┴─┘
2nd	112	└─┴─┴─┘
Max	113	└─┴─┴─┘
Refused	114	☐ 1
Unable to obtain		☐ 2
Left hand 1st	115	└─┴─┴─┘
2nd	116	└─┴─┴─┘
Max	117	└─┴─┴─┘
Refused	118	☐ 1
Unable to obtain		☐ 2
Total	119	└─┴─┴─┘

PUSH-UPS

Number	120	└─┴─┴─┘
Refused	121	☐ 1
Screened out		☐ 2

TRUNK FLEXION

to nearest 0.5 cm	122	└─┴─┴─┘
	123	└─┴─┴─┘
Max	124	└─┴─┴─┘
Refused	125	☐ 1
Screened out		☐ 2

SIT-UPS

Number in 60 sec	126	└─┴─┴─┘
Refused	127	☐ 1
Screened out		☐ 2

LONGITUDINAL DATA

Would you please give the name of three relatives or friends outside the household with whom you keep in touch? (We are hoping to repeat this survey in 5 years. We ask this in case we should want to reach you and you are not living at this address.)

Name └─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
Relationship └─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
Address └─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
└─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
└─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘

Name └─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
Relationship └─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
Address └─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
└─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
└─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘

Name └─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
Relationship └─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
Address └─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
└─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘
└─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┴─┘

COMMENTS

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IDENTIFICATION

[illegible]

Age

Sex

[illegible]

STATION 1

WEIGHT

[illegible]

HEIGHT

[illegible]

SKINFOLDS

[illegible]

ADULT DATA CARD

[illegible]

DIAMETERS

[illegible]

GIRTHS

[illegible]

STATION 2 – SCREENING

PAR-Q

[illegible]

OBSERVATION

[illegible]

Canada Fitness Survey

D-34

BEST COPY

Canada Fitness Survey
Enquête condition physique Canada

HOUSEHOLD RECORD CARD

DWELLING NUMBER ⊔⊔ OF ⊔⊔

1. Is this a single detached dwelling? ☐ Yes ☐ No
If NO, Floor level of main entrance of dwelling ⊔⊔
Total number of floors in building ⊔⊔
Total number of dwellings in building ⊔⊔

Docket Number ⊔⊔⊔⊔⊔⊔

Person Numbers →	PERSON NUMBER ⊔⊔	PERSON NUMBER ⊔⊔	PERSON NUMBER ⊔⊔	PERSON NUMBER ⊔⊔	PERSON NUMBER ⊔⊔	PERSON NUMBER ⊔⊔
1. Please name all the people who now live here.	GIVEN NAME	GIVEN NAME	GIVEN NAME	GIVEN NAME	GIVEN NAME	GIVEN NAME
2. Is there anyone else who usually lives here?	SURNAME	SURNAME	SURNAME	SURNAME	SURNAME	SURNAME
3. What is ____________'s date of birth?	⊔⊔ Month ⊔⊔ Year	⊔⊔ Month ⊔⊔ Year	⊔⊔ Month ⊔⊔ Year	⊔⊔ Month ⊔⊔ Year	⊔⊔ Month ⊔⊔ Year	⊔⊔ Month ⊔⊔ Year
4. That would make ____________'s age	⊔⊔ Age	⊔⊔ Age	⊔⊔ Age	⊔⊔ Age	⊔⊔ Age	⊔⊔ Age
5. Verify sex and "X" appropriate box	☐ M ☐ F	☐ M ☐ F	☐ M ☐ F	☐ M ☐ F	☐ M ☐ F	☐ M ☐ F
6. Hand Reference Card to respondent and say: I now want to find out how people are related to each other. Please refer to the Reference Card. How is _____ related to you?	⊔⊔ Relationship Code If 13, 24, 44, Specify	⊔⊔ Relationship Code If 13, 24, 44, Specify	⊔⊔ Relationship Code If 13, 24, 44, Specify	⊔⊔ Relationship Code If 13, 24, 44, Specify	⊔⊔ Relationship Code If 13, 24, 44, Specify	⊔⊔ Relationship Code If 13, 24, 44, Specify
7. Test Group Number	☐ Test Group	☐ Test Group	☐ Test Group	☐ Test Group	☐ Test Group	☐ Test Group

Some measurement information present?	☐ Yes ☐ No ☐ Less than 7 or over 69	☐ Yes ☐ No ☐ Less than 7 or over 69	☐ Yes ☐ No ☐ Less than 7 or over 69	☐ Yes ☐ No ☐ Less than 7 or over 69	☐ Yes ☐ No ☐ Less than 7 or over 69	☐ Yes ☐ No ☐ Less than 7 or over 69
Some questionnaire information present?	☐ Yes ☐ No ☐ Less than 10	☐ Yes ☐ No ☐ Less than 10	☐ Yes ☐ No ☐ Less than 10	☐ Yes ☐ No ☐ Less than 10	☐ Yes ☐ No ☐ Less than 10	☐ Yes ☐ No ☐ Less than 10
Household Response Code	☐ IF CODE IS NOT X, COMMENT					

Telephone Number ⊔⊔⊔–⊔⊔⊔⊔

Scheduling Information

Test Group	Date – Time	Confirmed
01		
02		
03		

REGIONAL SUPERVISOR ☐

Signature ____________

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D-35

THE Granville CORPORATION

CHILD DATA CARD

IDENTIFICATION

STATION 1

WEIGHT

HEIGHT

SKINFOLDS

DIAMETERS

GIRTHS

STATION 2 – SCREENING

OBSERVATION

Canada Fitness Survey

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STATION 2 (Con't)

BLOOD PRESSURE

Ensure 5 minute rest period with no postural change prior to measurement.

Child cuff	[illegible]	☐1
Adult cuff		☐2
Large cuff		☐3
Resting heart rate	[illegible]	☐☐☐
Systolic	[illegible]	☐☐☐
Diastolic	[illegible]	☐☐☐
Refusal	[illegible]	☐1
Unable to obtain	[illegible]	☐2

If resting heart rate is greater than 100, or systolic is greater than 150, or diastolic is greater than 100, have respondent rest 5 minutes and then repeat measurements.

Resting heart rate	[illegible]	☐☐☐	Over 100	☐
Systolic	[illegible]	☐☐☐	Over 150	☐
Diastolic	[illegible]	☐☐☐	Over 100	☐
Refusal			[illegible]	☐1
Unable to obtain				☐2

ACTIVITIES OF DAILY LIVING

If one or more boxes in the right hand column under PAR-Q, OBSERVATION or BLOOD PRESSURE has been checked, ask the following questions.
DO NOT COMPLETE STATION 2 OR 3

		Without difficulty	With minor difficulty	With major difficulty	Not at all
Can you run 100 yards?	[illegible]	☐1	☐2	☐3	☐4
Can you walk 300 yards without resting?	[illegible]	☐	☐	☐	☐
Can you walk up or down one flight of stairs (8 steps) without resting?	[illegible]	☐	☐	☐	☐
Can you get in and out of bed?	[illegible]	☐	☐	☐	☐
Can you, when standing, bend down and pick up a shoe from the floor?	[illegible]	☐	☐	☐	☐
Can you carry an object of 10 pounds for 30 yards?	[illegible]	☐	☐	☐	☐
Can you cut your own food (such as meat, fruit, etc.)?	[illegible]	☐	☐	☐	☐
Can you get dressed by yourself?	[illegible]	☐	☐	☐	☐

CHILD DATA CARD

STEP TEST

Temperature	[illegible]	☐☐ °
Refusal	[illegible]	☐
Pulse 1st	[illegible]	☐☐
2nd	[illegible]	☐☐
3rd	[illegible]	☐☐

If exercise was interrupted or discontinued, specify reason

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Final stage	[illegible]	☐
Systolic	[illegible]	☐☐☐
Diastolic	[illegible]	☐☐☐
Refusal	[illegible]	☐1
Unable to obtain		☐2
Systolic	[illegible]	☐☐☐
Diastolic	[illegible]	☐☐☐
Refusal	[illegible]	☐1
Unable to obtain		☐2
Heart rate	110	☐☐

STATION 3

GRIP STRENGTH

Right hand 1st	111	☐☐☐
2nd	112	☐☐☐
Max	113	☐☐☐
Refusal	114	☐1
Unable to obtain		☐2
Left hand 1st	115	☐☐☐
2nd	116	☐☐☐
Max	117	☐☐☐
Refusal	118	☐1
Unable to obtain		☐2
Total	119	☐☐☐

PUSH-UPS

Number	120	☐☐☐
Refusal	121	☐1
Screened out		☐2

TRUNK FLEXION

In nearest 0.5 cm	122	☐☐☐.☐
	123	☐☐☐.☐
Max	124	☐☐☐.☐
Refusal	125	☐1
Screened out		☐2

SIT-UPS

Number in 60 sec	126	☐☐☐
Refusal	127	☐1
Screened out		☐2

COMMENTS

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NATIONWIDE RECREATION SURVEY BY THE NATIONAL PARK SERVICE

THE Granville CORPORATION

O.M.B. No. [illegible] Approval Expires December [illegible]

Form NRS-1(X)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

NATIONWIDE RECREATION SURVEY QUESTIONNAIRE

National Crime Survey Supplement

NOTICE – Your report to the Census Bureau is confidential by law (U.S. Code 13, section 9). All identifiable information will be used only by persons engaged in and for the purposes of the survey and may not be disclosed or released to others for any purpose.

Sample	Control Number: PSU	Segment	CK	Serial	HH No.
JO—					

7

5 ☐ NCS – Proxy

Respondent
Line No. | Age | Name

Interviewer identification
Code | Name

C Type of interview
1 ☐ Personal
2 ☐ Telephone – flashcard booklet
3 ☐ Telephone – no flashcard booklet

Type of noninterview
6 ☐ NCS – TYPE Z
6a ☐ Refused NRS (supplement only)
7a ☐ Other – Specify

INTRODUCTION

▶ IF PERSONAL INTERVIEW – Now I have some questions about how you spend your free time in outdoor recreation activities. Hand respondent Privacy Act Statement in [illegible] The Bureau of the Census is collecting this information for the National Park Service. [illegible] This explains the legal authority for conducting this survey. [illegible] You were chosen at random to participate in this [illegible] voluntary and all information provided will be used for statistical purposes only. [illegible] These questions that I am going to ask you [illegible] survey and your answers will represent those of thousands of other people like yourself. [illegible] refer to just yourself and not to other members of your household. Now . . .

▶ IF TELEPHONE INTERVIEW – Now I have some questions about how you spend your free time in outdoor recreation activities. The Bureau of the Census is collecting this information for the National Park Service. You were chosen at random to participate in this survey and your answers will represent those of thousands of other people like yourself. [illegible] recently, I left a flashcard booklet for this survey. Would you please get it before we begin?

INTERVIEWER – Does respondent have flashcard booklet?
☐ Yes – Read remainder of introduction below and continue with form NRS-1 [illegible]
☐ No – Go to form NRS-2 and continue introduction

These questions that I am going to ask you refer to just yourself and not to other members of your household. Now . . .

1a. Are there any outdoor recreation activities that you particularly enjoy doing?
1 ☐ Yes
2 ☐ No – Skip to introduction on page 2

1b. What are the 3 most important to you?
☐☐ (1)
☐☐ (2)
☐☐ (3)

Is there more than 1 activity listed in 1b?
☐ Yes
☐ No – Skip to 1d

1c. Of those activities, which do you enjoy doing most?
☐☐
X ☐ No one favorite

	ACTIVITY (1)	ACTIVITY (2)	ACTIVITY (3)
▶ INTERVIEWER – *Enter activities from 1b*			
1d. *Ask for each activity.* Do you go (activity) as often as you would like?	1 ☐ Yes 2 ☐ No	1 ☐ Yes 2 ☐ No	1 ☐ Yes 2 ☐ No
1e. *Ask for each activity with "No" marked in 1d.* Turn to page [illegible] in the booklet. Here is a list of reasons why people don't do activities as often as they would like. Which, if any, of these are reasons that kept you from (activity) more often during the past 12 months? Any other reasons? *Mark all that apply.*	1 ☐	1 ☐	1 ☐
(1) There are no places to do the activity around here.	2 ☐	2 ☐	2 ☐
(2) The places to do the activity are poorly maintained.	3 ☐	3 ☐	3 ☐
(3) The places to do the activity are too crowded.	4 ☐	4 ☐	4 ☐
(4) The places to do the activity have pollution problems.	5 ☐	5 ☐	5 ☐
(5) The places to do the activity have personal safety problems.	6 ☐	6 ☐	6 ☐
(6) Not enough money.	7 ☐	7 ☐	7 ☐
(7) Not enough time.	8 ☐	8 ☐	8 ☐
(8) Inadequate transportation or too far to travel.	9 ☐	9 ☐	9 ☐
(9) Inadequate information on places to do the activity.	10 ☐	10 ☐	10 ☐
(10) Personal health reasons.	11 ☐	11 ☐	11 ☐
(11) Don't have the people to do the activity with.	12 ☐	12 ☐	12 ☐
(12) Some other reason – *Specify*	13 ☐	13 ☐	13 ☐
	☐	☐	☐
	☐	☐	☐
1f. *Ask for all activities listed.* People enjoy outdoor recreation activities for different reasons. Look at page [illegible] of the booklet. Here is a list of such reasons. Which, if any, of these are reasons why you enjoy (activity)? Any other reasons? *Mark all that apply.*	1 ☐	1 ☐	1 ☐
(1) It's quiet and peaceful where I go.	2 ☐	2 ☐	2 ☐
(2) There aren't many people around.	3 ☐	3 ☐	3 ☐
(3) I have the special equipment for it. I like using the equipment.	4 ☐	4 ☐	4 ☐
(4) It gives me a chance to be with family or friends.	5 ☐	5 ☐	5 ☐
(5) To do something new or different.	6 ☐	6 ☐	6 ☐
(6) To enjoy nature and the outdoors.	7 ☐	7 ☐	7 ☐
(7) I like the people who do that activity.	8 ☐	8 ☐	8 ☐
(8) To get exercise or keep in shape.	9 ☐	9 ☐	9 ☐
(9) To get away from day-to-day living or problems.	10 ☐	10 ☐	10 ☐
(10) Some other reason – *Specify*	☐	☐	☐
	☐	☐	☐
	☐	☐	☐

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various outdoor recreation activities

INTRODUCTION – Hand page of the booklet. This is a list of activities. I'd like you to think about the outdoor recreation activities you took part in whether it was on vacations, trips, outings, or at any other time during the past 12 months, from ____ 198__, to ____ of this year.

2a. [illegible]

During the past 12 months, did you go (read each activity in Group I in column 2a)?

Record "Yes" responses in 2b for each activity, one at a time. Ask for ALL groups and then go to Check Item B in the next column.

Are there any entries in 2b? [illegible]

☐ Yes – Ask 2c, 2d, and 2e separately for each activity with "Yes" in 2b

☐ No – Skip to 3

2c. Turn to page in the booklet. During the past 12 months, on ABOUT how many different days did you go (activity)?

2d. How many of these days were during the past 6 months (exact months)?

2e. At what age did you first go (activity)?

ACTIVITY CHART

During the past 12 months, did you go

2a. Activities	2b. If "Yes," check (✓)	2c. No. of days (12 mos.)	2d. No. of days (6 mos.)	2e. Age
GROUP I				
Bicycling	☐			
Horseback riding	☐			
Golfing	☐			
Play tennis outdoors	☐			
Participate in outdoor team sports	☐			
Any other outdoor games or sports	☐	DO NOT ASK		

During the past 12 months, did you go

2a. Activities	2b. If "Yes," check (✓)	2c. No. of days (12 mos.)	2d. No. of days (6 mos.)	2e. Age
GROUP II				
Canoeing or kayaking				
Sailing	☐			
[illegible]	☐			
Waterskiing	☐	DO NOT ASK		
Any other boating or watercraft sport	☐	DO NOT ASK		

During the past 12 months, did you go

2a. Activities	2b. If "Yes," check (✓)	2c. No. of days (12 mos.)	2d. No. of days (6 mos.)	2e. Age
GROUP III				
Swimming in an outdoor pool				
Any other outdoor swimming	☐			
Fishing				
Hunting				

During the past 12 months, did you go

2a. Activities	2b. If "Yes," check (✓)	2c. No. of days (12 mos.)	2d. No. of days (6 mos.)	2e. Age
GROUP IV				
Backpacking				
Camping in developed campgrounds	☐			
Camping in primitive campgrounds	☐			
Any other camping	☐			

During the past 12 months, did you go

2a. Activities	2b. If "Yes," check (✓)	2c. No. of days (12 mos.)	2d. No. of days (6 mos.)	2e. Age
GROUP V				
Day hiking				
Walking for pleasure	☐	DO NOT ASK		
Running or jogging	☐	DO NOT ASK		
Birdwatching or other nature study activities	☐			

During the past 12 months, did you go

2a. Activities	2b. If "Yes," check (✓)	2c. No. of days (12 mos.)	2d. No. of days (6 mos.)	2e. Age
GROUP VI				
Go picnics	☐	DO NOT ASK		
Driving for pleasure	☐	DO NOT ASK		
Sightseeing	☐	DO NOT ASK		
Driving motorized vehicles off improved roads (including motorcycles but not snowmobiles)				

During the past 12 months, did you go

2a. Activities	2b. If "Yes," check (✓)	2c. No. of days (12 mos.)	2d. No. of days (6 mos.)	2e. Age
GROUP VII				
Ice skating	☐	DO NOT ASK		
Downhill skiing	☐			
Cross country skiing or ski touring				
Snowmobiling				
Sledding	☐	DO NOT ASK		
Any other outdoor winter activities	☐	DO NOT ASK		

During the past 12 months, did you go

2a. Activities	2b. If "Yes," check (✓)	2c. No. of days (12 mos.)	2d. No. of days (6 mos.)	2e. Age
GROUP VIII				
Visit any zoos, fairs, or amusement parks	☐	DO NOT ASK		
Attend any outdoor sports events	☐			
Attend any outdoor concerts, plays, or other outdoor performances	☐			

During the past 12 months, did you

2a. Activities	2b. If "Yes," check (✓)	2c. No. of days (12 mos.)	2d. No. of days (6 mos.)	2e. Age
GROUP IX				
Take part in any other outdoor recreation activity [illegible] Any others?	☐			
	☐			
	☐			
	☐			

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2f. During the past 2 years, that is since 19__, have you stopped doing any outdoor recreation activities that you used to do?

1 ☐ Yes

2 ☐ No — Skip to 2i.

2g. Which activities have you stopped doing? Any other activities?

Code from 2a, if possible. Record up to the first three.

☐☐ (1)

☐☐ (2)

☐☐ (3)

2h. Ask for each activity in 2g.
Look at the card on page in the booklet.
Why did you stop (activity)?
Any other reasons? Mark all that apply

	Activity (1)	Activity (2)	Activity (3)
(1) There are no places to do the activity around here.	1 ☐	1 ☐	1 ☐
(2) The places to do the activity are poorly maintained.	2 ☐	2 ☐	2 ☐
(3) The places to do the activity are too crowded.	3 ☐	3 ☐	3 ☐
(4) The places to do the activity have pollution problems.	4 ☐	4 ☐	4 ☐
(5) The places to do the activity have personal safety problems.	5 ☐	5 ☐	5 ☐
(6) Not enough money.	6 ☐	6 ☐	6 ☐
(7) Not enough time.	7 ☐	7 ☐	7 ☐
(8) Inadequate transportation or too far to travel.	8 ☐	8 ☐	8 ☐
(9) Inadequate information on places to do the activity.	9 ☐	9 ☐	9 ☐
(10) Personal health reasons.	☐	10 ☐	10 ☐
(11) Don't have people to do activity with.	11 ☐	11 ☐	11 ☐
(12) Some other reason(s) — Specify	12 ☐	12 ☐	12 ☐
	☐	☐	☐
	☐	☐	☐

2i. During the next two years, that is, between now and 19__, do you expect you might start doing any outdoor recreation activities that you haven't done before?

1 ☐ Yes

2 ☐ No — Skip to Check Item C

2j. Which activities are these? Any other activities?

Record up to the first three. (Code from 2b if possible.)

☐☐ (1)

☐☐ (2)

☐☐ (3)

CHECK ITEM C

Is respondent 16 yrs. or older?

☐ Yes - Go to Check Item D

☐ No - Skip to 4a

NOTES

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D-40

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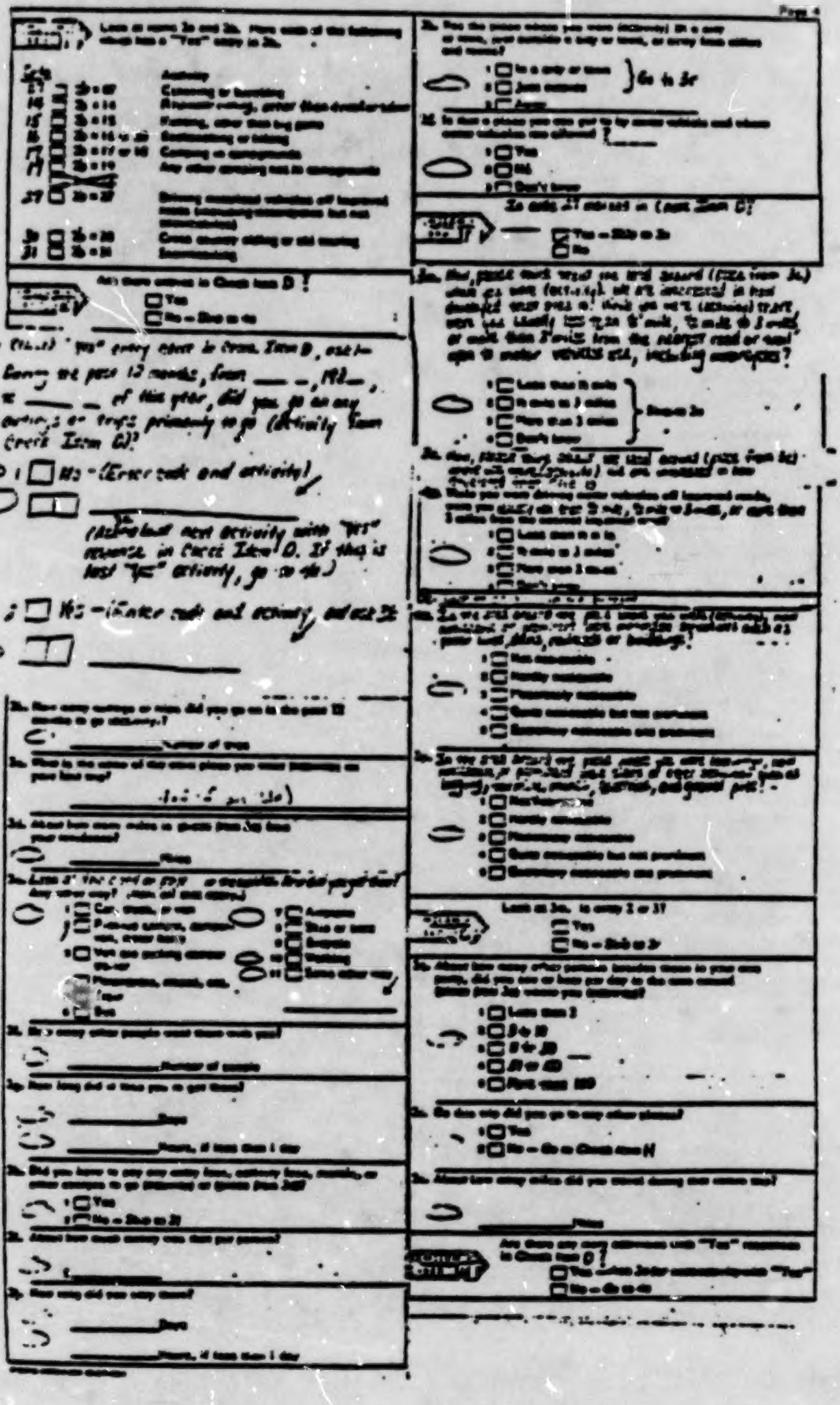
THE Granville CORPORATION



Page 4

(For (each) "yes" entry check in Check Item D, ask —

3c. During the past 12 months, from ___ ___, 198_, to ___ ___ of this year, did you go on any outings or trips primarily to go (activity from Check Item D)?

○ 1 ☐ No – (Enter code and activity)

☐☐ ______

(Ask about next activity with "yes" response in Check Item D. If this is last "yes" activity, go to 4a.)

○ 2 ☐ Yes – (Enter code and activity, and ask 3d)

☐☐ ______

3m. Now, please think about the trail around (place from 3k) where you were (activity). We are interested in how developed that area is. Would you say (activity) there, were you usually less than ½ mile, ½ mile to 3 miles, or more than 3 miles from the nearest road or road open to motor vehicles, including snowmobiles?

316

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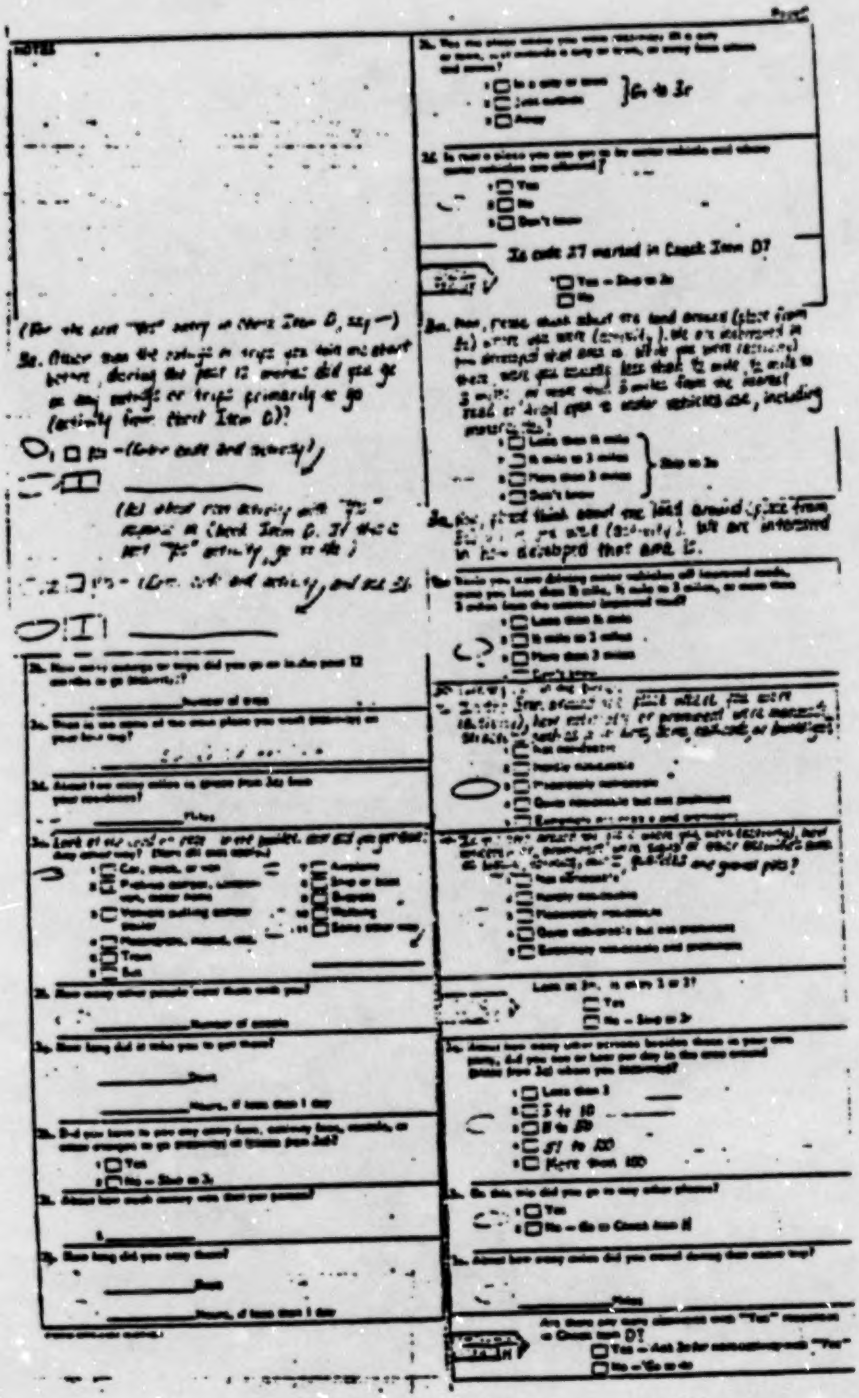

NOTES

(For the next "Yes" entry in Check Item D, say —)

3a. Other than the outings or trips you told me about before, during the past 12 months did you go on any outings or trips primarily to go (activity from Check Item D)?

1 ☐ Yes – (Enter code and activity)

(Ask about each activity with "Yes" response in Check Item D. If this is last "Yes" activity, go to 4a.)

2 ☐ No – (Enter code and activity, and ask 3b.)

3b. How many outings or trips did you go on in the past 12 months to go [illegible]?

____ Number of trips

3c. What is the name of the [illegible] place you went [illegible] on your last trip?

3d. About how many miles is [illegible] from your residence?

____ Miles

3e. Look at this card [illegible]. How did you get there? Any other way? [illegible]

1 ☐ Car, truck, or van
2 ☐ Pickup camper, camper van, motor home
3 ☐ Vehicle pulling camper trailer
4 ☐ Motorcycle, moped, etc.
5 ☐ Train
6 ☐ Bus
7 ☐ Airplane
8 ☐ Ship or boat
9 ☐ Bicycle
10 ☐ Walking
11 ☐ Some other way

3f. How many other people went there with you?

____ Number of people

3g. How long did it take you to get there?

____ Days

____ Hours, if less than 1 day

3h. Did you have to pay any entry fees, user fees, rentals, or other charges to go [illegible] at [illegible]?

1 ☐ Yes
2 ☐ No – Skip to 3j

3i. About how much money was that per person?

$____

3j. How long did you stay there?

____ Days

____ Hours, if less than 1 day

3k. Was the place where you were [illegible] in a city or town, just outside a city or town, or away from cities and towns?

1 ☐ In a city or town
2 ☐ Just outside
3 ☐ Away

] Go to 3r

3l. Is that a place you can get to by motor vehicle and where motor vehicles are allowed?

1 ☐ Yes
2 ☐ No
3 ☐ Don't know

Is code 27 marked in Check Item D?

☐ Yes – Skip to 3o
☐ No

3m. Now, please think about the land around (place from 3c) where you were (activity). We are interested in how developed that area is. While you were (activity) there, were you usually less than ½ mile, ½ mile to 3 miles, or more than 3 miles from the nearest road or trail open to motor vehicle use, including motorcycles?

1 ☐ Less than ½ mile
2 ☐ ½ mile to 3 miles
3 ☐ More than 3 miles
4 ☐ Don't know

} Skip to 3o

3n. Now, please think about the land around (place from 3c) where you were (activity). We are interested in how developed that area is.

[illegible] were you less than ½ mile, ½ mile to 3 miles, or more than 3 miles from the nearest improved road?

1 ☐ Less than ½ mile
2 ☐ ½ mile to 3 miles
3 ☐ More than 3 miles
☐ Don't know

3o. [illegible] place where you were [illegible], how noticeable or prominent were man-made [illegible] such as [illegible] buildings?

1 ☐ Not noticeable
2 ☐ Hardly noticeable
3 ☐ Fairly noticeable
4 ☐ Quite noticeable but not dominant
5 ☐ Extremely noticeable and dominant

3p. [illegible] where you were [illegible], how noticeable or prominent were signs of other [illegible] and gravel pits?

1 ☐ Not noticeable
2 ☐ Hardly noticeable
3 ☐ Fairly noticeable
4 ☐ Quite noticeable but not dominant
5 ☐ Extremely noticeable and dominant

Look at 3m, is entry 1 or 2?

☐ Yes
☐ No – Skip to 3r

3q. About how many other persons besides those in your own party, did you see or hear per day in the area around (place from 3c) where you [illegible]?

1 ☐ Less than 5
2 ☐ 5 to 10
3 ☐ 11 to 50
4 ☐ 51 to 100
5 ☐ More than 100

3r. On this trip did you go to any other places?

1 ☐ Yes
2 ☐ No – Go to Check Item E

3s. About how many miles did you travel during that entire trip?

____ Miles

Are there any more activities with "Yes" responses in Check Item D?

☐ Yes – Ask 3a for next activity with "Yes"
☐ No – Go to 4a

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THE Granville CORPORATION

5a. Turn to page [illegible] in the booklet. Page 6

4a. [illegible] TO YOU [illegible] First, would you say that . . .
[illegible] very important, somewhat important, or not very important?
1 ☐ Very important
2 ☐ Somewhat important
3 ☐ Not very important

4b. Having parks or outdoor recreation areas within a 15-minute walk from home is very important, somewhat important, or not very important?
1 ☐ Very important
2 ☐ Somewhat important
3 ☐ Not very important

4c. Having parks or outdoor recreation areas that are further than a 15-minute walk, but within an hour's travel time from home is very important, somewhat important, or not very important?
1 ☐ Very important
2 ☐ Somewhat important
3 ☐ Not very important

4d. Having parks or outdoor recreation areas even further away, more than an hour's travel, [illegible] is very important, somewhat important, or not very important?
1 ☐ Very important
2 ☐ Somewhat important
3 ☐ Not very important

4e. Now let's talk about the different places where you engage in outdoor recreation.
Does your residence have a yard or play area that you can use for outdoor recreation?
1 ☐ Yes
2 ☐ No – Skip to 4g

4f. During the past 12 months, from ________ 1, 19__, to [illegible] of this year, on how many different days did you use this yard or play area for outdoor recreation?
Read answer categories.
1 ☐ Never
2 ☐ 1 to 2 days
3 ☐ 3 to 10 days
4 ☐ More than 10 days

4g. Are there parks or outdoor recreation areas within a 15-minute walk from your residence?
1 ☐ Yes
2 ☐ No – Skip to 4i

4h. During the past 12 months from ________ 1, 19__, to [illegible] of this year, on how many different days did you go to parks or outdoor recreation areas within a 15-minute walk?
Read answer categories.
1 ☐ Never
2 ☐ 1 to 2 days
3 ☐ 3 to 10 days
4 ☐ More than 10 days

4i. During the past 12 months, on about how many different days did you go to parks or outdoor recreation areas that were more than a 15-minute walk, but within an hour's travel from home?
Read answer categories.
1 ☐ Never
2 ☐ 1 to 2 days
3 ☐ 3 to 10 days
4 ☐ More than 10 days

4j. During the past 12 months, on about how many different days did you visit any parks or outdoor recreation areas, that were more than an hour's travel from home?
Read answer categories.
1 ☐ Never
2 ☐ 1 to 2 days
3 ☐ 3 to 10 days
4 ☐ More than 10 days

5a. [illegible] Can you recall ever going to any of these national parks?
1 ☐ Yes
2 ☐ No – Skip to 5d

5b. Which national parks have you gone to?
[illegible] "Pg. [illegible] in the booklet"

☐☐ ☐☐ – ☐☐ – ☐☐
☐☐ ☐☐ – ☐☐ ☐☐
☐☐ ☐☐ ☐☐ ☐☐
☐☐ ☐☐ – ☐☐ ☐☐
☐☐ ☐☐ – ☐☐ ☐☐

If more than 20, how many more?
____

5c. In what year did you last visit one of these national parks?
1 9 ☐ ☐

5d. How likely are you to visit one of the national parks in the next 12 months, very likely, somewhat likely, or not very likely?
1 ☐ Very likely – Skip to ~~[illegible]~~ Check Item I
2 ☐ Somewhat likely
3 ☐ Not very likely
4 ☐ Don't know

5e. ~~[illegible]~~

5e. How likely are you to visit one of the national parks in the next 5 years?
1 ☐ Very likely
2 ☐ Somewhat likely
3 ☐ Not very likely
4 ☐ Don't know
} Skip to 5f. Check Item J

CHECK ITEM I
Is respondent 16 yrs. or older?
☐ Yes – Ask 5f
☐ No – End interview

5f. Many national parks charge entry fees. Additional fees are charged for the use of certain facilities and services inside the parks. Thinking now about any amount from 25 cents to 40 dollars, what is the highest entry fee that you would pay per adult to visit any national park in the next 3 years?
$________
X ☐ Don't know

5g. [illegible] to all national parks as often as you wanted to go during the year. Thinking about any amount from 5 dollars to 100 dollars, [illegible]
$________
☐ [illegible]
☐ Don't know

CHECK ITEM J
Is respondent 16 yrs. or older?
☐ Yes – Ask 5f
☐ No – End interview

5h. Turn to the card or page [illegible] in the booklet.
[illegible] dollars for each visitor. Thinking now about each INDIVIDUAL visitor, how much of the 5 dollar cost do you think should be paid directly by that visitor through entry and other fees, and how much should be paid by the general public from tax revenue? [illegible]
1 ☐ All ($5.00) from park visitor – nothing from taxes
2 ☐ ¾ ($3.75) from each visitor – the rest from taxes
3 ☐ ½ ($2.50) from each visitor – the rest from taxes
4 ☐ ¼ ($1.25) from each visitor – the rest from taxes
5 ☐ Nothing from each visitor – all ($5.00) from taxes
6 ☐ Don't know

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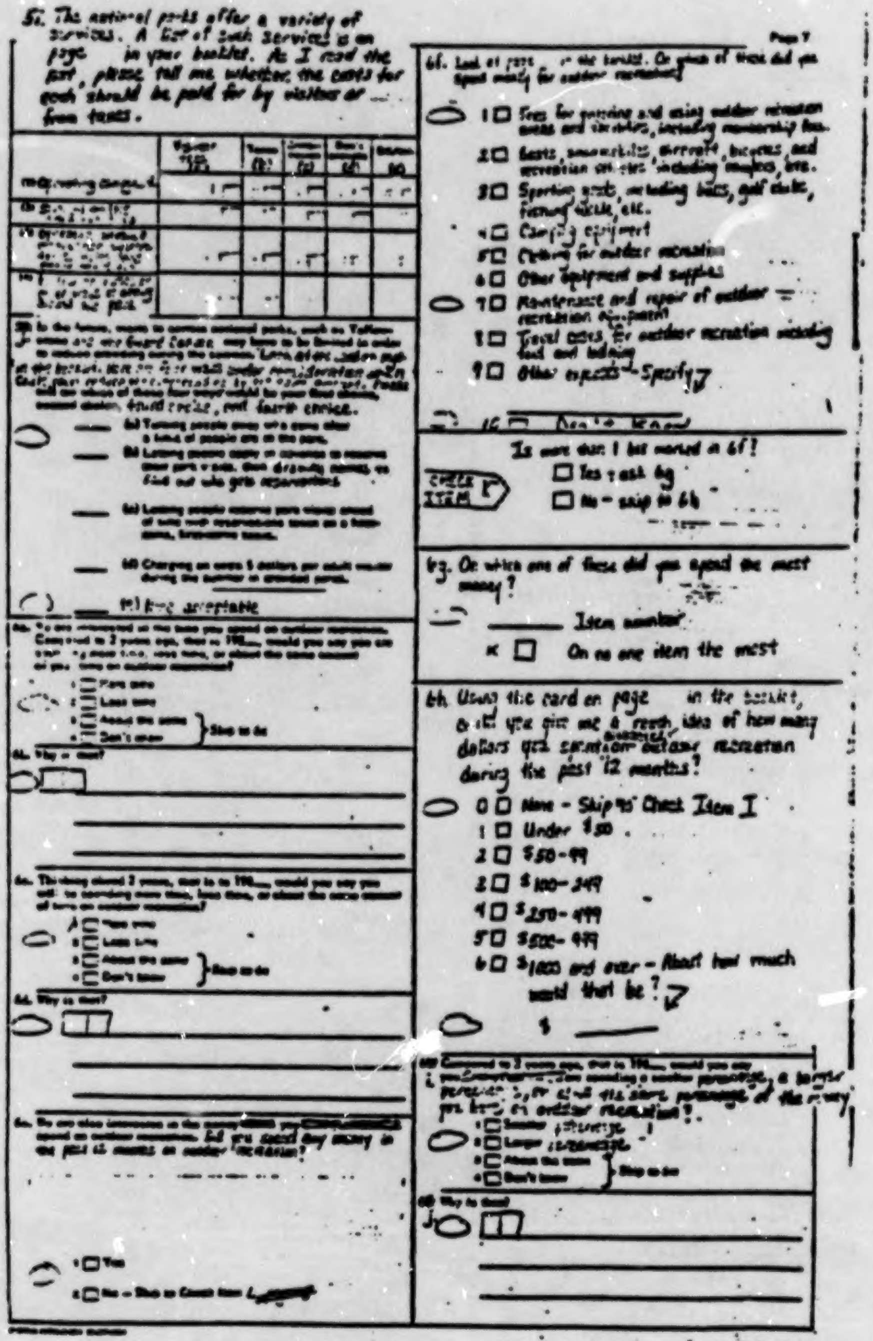

Page 7

5i. The national parks offer a variety of services. A list of such services is on page in your booklet. As I read the list, please tell me whether the costs for each should be paid for by visitors or from taxes.

	[illegible] (1)	[illegible] (2)	[illegible] (3)	[illegible] (4)	[illegible] (5)
(1) [illegible] campgrounds					
(2) [illegible]					
(3) [illegible]					
(4) [illegible]					

5j. In the future, visits to certain national parks, such as Yellowstone and the Grand Canyon, may have to be limited in order to reduce crowding during the summer. Look at the ... page of the booklet. Here are four ways under consideration ... [illegible] ... first choice, second choice, third circle, and fourth choice.

___ (a) Turning people away once ... a limit of people are in the park.

___ (b) Letting people apply in advance to reserve their park visits, then drawing names to find out who gets reservations.

___ (c) Letting people reserve park visits ahead of time ... [illegible]

___ (d) Charging an extra 5 dollars per adult visitor during the summer in crowded parks.

___ (e) None acceptable

6a. [illegible] Compared to 2 years ago, that is 19__, would you say you are [illegible] more time, less time, or about the same amount of time on outdoor recreation?

1 ☐ More time
2 ☐ Less time
3 ☐ About the same
4 ☐ Don't know } Skip to 6c

6b. Why is that?

6c. Thinking ahead 2 years, that is to 19__, would you say you will be spending more time, less time, or about the same amount of time on outdoor recreation?

1 ☐ More time
2 ☐ Less time
3 ☐ About the same
4 ☐ Don't know } Skip to 6e

6d. Why is that?

6e. [illegible] spend on outdoor recreation. Did you spend any money in the past 12 months on outdoor recreation?

1 ☐ Yes
2 ☐ No – Skip to Check Item [illegible]

6f. Look at page in the booklet. On which of these did you spend money for outdoor recreation?

1 ☐ Fees for entering and using outdoor recreation areas and facilities, including membership fees.
2 ☐ Boats, snowmobiles, aircraft, bicycles and recreation vehicles including campers, etc.
3 ☐ Sporting goods, including bats, golf clubs, fishing tackle, etc.
4 ☐ Camping equipment
5 ☐ Clothing for outdoor recreation
6 ☐ Other equipment and supplies
7 ☐ Maintenance and repair of outdoor recreation equipment
8 ☐ Travel costs for outdoor recreation including food and lodging
9 ☐ Other expenses – Specify
16 ☐ Don't Know

CHECK ITEM [illegible]

Is more than 1 box marked in 6f?

☐ Yes – ask 6g
☐ No – skip to 6h

6g. On which one of these did you spend the most money?

_____ Item number
x ☐ On no one item the most

6h. Using the card on page in the booklet, could you give me a rough idea of how many dollars you spent on outdoor recreation during the past 12 months?

0 ☐ None – Skip to Check Item I
1 ☐ Under $50
2 ☐ $50-99
3 ☐ $100-249
4 ☐ $250-499
5 ☐ $500-999
6 ☐ $1000 and over – About how much would that be?

$ _____

6i. Compared to 2 years ago, that is 19__, would you say you are spending a smaller percentage, a larger percentage, or about the same percentage of the money you have on outdoor recreation?

1 ☐ Smaller percentage
2 ☐ Larger percentage
3 ☐ About the same
4 ☐ Don't know } Skip to 6k

6j. Why is that?

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D-44

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6b. Looking ahead 2 years, that is to 198__, will you probably be spending a smaller percentage, a larger percentage, or about the same percentage of the money you have on outdoor recreation?

1 ☐ Smaller percentage
2 ☐ Larger percentage
3 ☐ About the same
4 ☐ Don't know

} Skip to Check Item L

6c. Why is that?

1. ☐☐ ______________________

____

____

CHECK ITEM L

Is respondent 65 years old or older?

☐ Yes – Ask 7a
☐ No – END INTERVIEW

7a. During the last 12 months from ____________, 198__, to ____________ of this year, have you taken part in any outdoor recreation activities which were sponsored by a club or organization?

1 ☐ Yes
2 ☐ No – Skip to 7d

7b. What are the names of these organizations?

PROBE: Can you think of any other clubs or organizations which sponsored outdoor recreation activities in which you took part during the past 12 months?

List up to four organizations below, then ask → 7c. Are you a member of (first organization mentioned)? What about (second, etc.)?

(7b) Organization	(7c) Membership
☐☐ (1)	1 ☐ Yes 2 ☐ No
☐☐ (2)	1 ☐ Yes 2 ☐ No
☐☐ (3)	1 ☐ Yes 2 ☐ No
☐☐ (4)	1 ☐ Yes 2 ☐ No

7d. Some people are experienced in outdoor recreation activities which they could help others to learn. Do you have ANY outdoor recreation skill or interest which you think you could help others to learn or practice, including family and friends?

1 ☐ Yes
2 ☐ No – END INTERVIEW

7e. What is that skill or interest?

PROBE: Are there any other outdoor skills or interests that you could help others to learn?

☐☐ (1) ______________________

☐☐ (2) ______________________

☐☐ (3) ______________________

7f. Are you currently teaching (this/any of these) skill(s) to others?

1 ☐ Yes
2 ☐ No – Skip to 7h

7g. Now, about the kinds of people you teach (this/these) skill(s), are they family or relatives, friends or acquaintances, organization members, or other people?

Mark all that apply.

1 ☐ Family or relatives
2 ☐ Friends or acquaintances
3 ☐ Organization members
4 ☐ Other people – Specify ↙

____

} END INTERVIEW

7h. There are many reasons why people don't teach others the outdoor recreation skills or interests they have. Turn to page [illegible] in your booklet. Here is a list of some of these reasons. Please tell me which of these reasons might apply to you.

Any other reasons?

Mark all that apply.

1 ☐ Not enough time
2 ☐ Not interested in teaching
3 ☐ Don't know how to teach or wouldn't feel comfortable teaching
4 ☐ Personal health reasons
5 ☐ Lack of transportation
6 ☐ Don't have equipment or supplies
7 ☐ Haven't been asked to teach
8 ☐ Don't know the right people or organizations to get in touch with
9 ☐ Other reasons – Specify ↙

____

END INTERVIEW

NOTES

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NATIONAL HISPANIC HEALTH PROMOTION SURVEY OF THE NATIONAL COALITION OF HISPANIC MENTAL HEALTH AND HUMAN SERVICES ORGANIZATIONS

COSSMHO'S
NATIONAL HISPANIC HEALTH PROMOTION SURVEY

MAJOR STUDY GOALS: This health promotion program/*activity* survey is one segment of a broader effort to develop a network for training people to deliver health promotion services in the areas of:

- Smoking cessation;
- Alcohol and drug abuse;
- Nutrition;
- Fitness and exercise;
- Stress management;*
- Safety;
- Hypertension control;
- General lifestyle skills related to health

The major purpose of this survey is to determine what health promotion services (programs/*activities*) in the above areas are being provided by Hispanic health and human services organizations. Health promotion will be defined as teaching people the skills they need to adopt healthier habits of living.

EXPECTED OUTCOMES: Through this survey, we expect to gather preliminary data on health promotion programs and *activities* throughout the country. Variables such as service approaches; staffing; primary populations serviced, etc., will be compiled and disseminated to encourage replication.

GENERAL INFORMATION:

Name of the organization which conducts the health promotion program/*activity*:

____

Address ____________________________________

City ____________________ State ________ Zip ________

Telephone (______) ____________________________

Name and position of person completing questionnaire: ________________

____

Day-time telephone # of person completing questionnaire: (______) ____________

**We realize that many mental health centers include stress management as part of the therapies they provide, but for the purposes of this project we are looking only for programs/activities that focus exclusively on teaching stress management techniques.*

CRITERIA FOR IDENTIFICATION FOR A PROGRAM/*ACTIVITY*:

Please duplicate and complete questions 1-8 for each separate health promotion program/*activity* that your agency conducts. Return this information so that COSSMHO has it by Monday, March 15, 1982.

Name of the health promotion program/*activity* this survey pertains to:

____

Listed below are our criteria for a health promotion program. Please place a check next to those statements which apply. If you check all the statements listed below, we will consider your service to be a program. If you check only some of the statements, we will consider your service to be an *activity*.

☐ Our health promotion program/*activity* has a specified budget and staff assigned to it.

☐ Our health promotion program/*activity* has a record of enrollments and completions.

☐ Our health promotion program/*activity* is conducted at a regular identifiable site.

☐ Our health promotion program/*activity* has written materials describing its approach, objectives and goals.

☐ Our health promotion program/*activity* has maintained a record of its developmental history during FY 80.

1. Which of the following health promotion services does your program/*activity* sponsor:

☐ Health fair-type events

☐ One-to-one counseling

☐ Hand-out literature

☐ Other ____________________
(Please specify)

2. What/where is the primary site of the program/*activity*?

____

____

3. In FY 80, what budget amount was allocated for this health promotion/ *activity*?

☐ up to $1,000 ☐ $10,000-$15,000

☐ $1,000-$5,000 ☐ $15,000-$20,000

☐ $5,000-$10,000 ☐ over $20,000

____
(Please estimate)

4. Where do funds for this program/ *activity* come from?

☐ federal funds ☐ local funds

☐ state funds ☐ fund-raising events

☐ Other ____________________
(Please specify)

Please answer all multiple choice questions by placing a check mark (√) next to the appropriate response(s):

A. Type of facility which sponsors the health promotion program/*activity*:
(Please check)

☐ CMHC

☐ Hospital

☐ Worksite

☐ School

☐ Clinic

☐ Other ______________________
(Please specify)

B. Please rank the following health promotion categories; one being the category which your agency gives the highest priority to, and eight or nine given the least priority.

☐ Alcohol and Drug Abuse

☐ Nutrition

☐ Fitness and Exercise

☐ Safety

☐ Hypertension Control

☐ Stress

☐ Lifestyle skills

☐ Smoking Cessation

☐ Other ______________________
(Please specify)

C. Are you aware of health promotion programs/*activities* in your community conductd by:

☐ American Red Cross

☐ National Urban League

☐ YMCA

☐ Other ______________________
(Please specify)

D. Do you refer agency clients to any other health promotion services?

☐ Yes ☐ No

If yes,

____
Name of Agency

____
Address

____
City

____
State Zip

(______) ______________________
Area Code Phone #

E. Is/are there individuals in your community that you consider expert(s) skilled in health promotion for Hispanics? (Please attach a list of any additional names and addresses)

☐ Yes ☐ No

____
Name

____
Address

____
City State

F. What kinds of health promotion activities do you feel are needed by the Hispanic community you serve?

____

____

____

____

____

5. Which segment of the population is considered most at risk in this area by your agency? Please rank; one being the population which your agency considers most at risk, and seven being the least at risk.

☐ Infants (Up to 1 yr)

☐ Children (1 to 12 yrs)

☐ Adolescents (12-18 yrs)

☐ Elderly (65 and older)

☐ Young adult (18-24 yrs)

☐ Adult women (24-65 yrs)

☐ Adult men (24-65 yrs)

6. Approximately what percentage of those served in this program/activity are Hispanic?

☐ 10% - 25%

☐ 25% - 50%

☐ 50% - 75%

☐ 75% - 100%

7. Describe factors which your program/activity feels make it culturally relevant to the Hispanic population.

____

____

____

____

____

8. How does your agency determine the success of its health promotion program/activity?

____

____

____

If you have any questions please call Diana C. Torres at: (202) 638-0505

Thank you for completing this questionnaire. Please used the enclosed self-addressed, stamped envelope and return to:

COSSMHO
1015 15th Street, N.W.
Suite 402
Washington, D.C. 20005
Attn: Health Promotion Survey

NATIONAL URBAN LEAGUE HEALTH PROMOTION QUESTIONNAIRE

NATIONAL URBAN LEAGUE

HEALTH PROMOTION QUESTIONNAIRE

1. Please give the name of this affiliate________________________________

2. In Fiscal Year 1980/81 (July 1, 1980 to June 30, 1981) did your affiliate conduct any programs covering any of these subject areas:

hypertension control	___yes	___no
nutrition (WIC)	___yes	___no
alcohol and drug abuse	___yes	___no
stress management & crisis intervention	___yes	___no
fitness and exercise	___yes	___no
smoking cessation	___yes	___no
safety	___yes	___no
family planning and parenting	___yes	___no
cancer detection	___yes	___no
dental health	___yes	___no
venereal disease information	___yes	___no
other (please describe)	___yes	___no

____

____

____

Please give the full names of your health promotion programs and indicate what type of service each program offers.

If you have more than one budgeted health promotion program to describe, please duplicate the rest of this form and fill it out separately for each program.

If you do not offer any health promotion programs, please answer questions 12, 13, 14, 15, 16, and 17 only.

3. Do you offer a general health promotion program that encompasses several of the areas listed above to encourage healthier lifestyles? ___yes ___no

If so, please give the name of this program________________________

4. Does the program have an assigned staff? ___yes ___no

If yes, how many paid employees?__________

How many volunteer staff? __________

5. Do program activities take place in a regular, identifiable facility? ___yes ___no

If yes, what type of facility is it?

___community center
___church
___school
___agency facility
___other (eg. YMCA, please give names of other facilities)

6 Does the program have an assigned budget? ___yes ___no

If yes, how much is the budget?

___$10,000 or less
___$25,000 or less
___$50,000 or less

7 What is the source of funding for the program?

___state government
___local government
___United Way
___other private funding source (please describe)

8. Does the program include use of written materials? ___yes ___no

What are the titles of these materials?

____

____

____

Does the program include use of audiovisual materials? ___yes ___no

What are the titles of these materials?

____

____

____

Who produced these materials?

___Federal Government
___National Urban League
___local staff

9. Is a record kept of participant enrollments and completions in the program? ___yes ___no

How many participants are presently enrolled?

___less than 15
___less than 25
___less than 50
___more (how many?)

How many participants have completed the program?

___less than 15
___less than 25
___less than 50
___more (how many?)

10. What types of records are kept on program participants?

    ___attendance
    ___progress (number of pounds lost)
    ___medical history (eg. use of medication)
    ___other (please describe)

11. Has a survival history of the program been kept, recording its development over time? ___yes ___no

12. What other agencies in your community conduct health promotion programs that are highly utilized by Blacks?

    ___YMCA
    ___YWCA
    ___community health centers
    ___Red Cross
    ___an agency that serves predominantly spanish speaking people or an agency which is a member of COSSMHO
    ___hospital
    ___church
    ___other (please describe)

13. Do you refer people regularly to other agencies so that they can receive health promotion services? ___yes ___no

    Which agencies do you recommend most often?

    ___YMCA
    ___YWCA
    ___community health centers
    ___Red Cross
    ___an agency that serves predominantly spanish speaking people or an agency which is a member of COSSMHO
    ___hospital
    ___church
    ___other (please describe)

14. What types of health promotion services do the people that you come in contact with request most frequently? (see list at beginning of the questionnaire)

15. What types of health promotion programs would you be interested in operating at your affiliate? (see list at beginning of the questionnaire)

16. Please give the name of the person who is completing this questionnaire and describe his or her relationship to this affiliate.

17. Does your affiliate operate another type of health program? ___yes ___no

    If so, please describe this program.

NCAA SPORTS AND RECREATION PROGRAMS SURVEY

Sports and Recreational Programs of the Nation's Universities and Colleges

A Questionnaire of the National Collegiate Athletic Association

DO NOT WRITE IN THIS SPACE

1. GENERAL INFORMATION

Name of Institution________________________________

Mailing Address________________________________

Institution is publicly supported ________ privately supported ________ (check one) (01)

Total number of full-time undergraduate students, spring 1982 ________ (02)

Number of full-time undergraduate male students ________ (03)

Number of full-time undergraduate female students ________ (04)

Total number of graduate students, spring 1982 ________ (05)

Number of graduate male students ________ (06)

Number of graduate female students ________ (07)

2. FINANCES

Please list your institution's annual budget (including salaries) for the following programs in 1981-82:

Intercollegiate Athletics $____________(01)

Intramural Sports $____________(02)

Required Physical Education $____________(03)

Club Sports $____________(04)

TOTAL $____________(05)

What percentage of the budget of intercollegiate athletics is financed by gate receipts, concessions and other income from intercollegiate contests? ________% (06)

If income from intercollegiate athletics is used for other purposes, please indicate their use and the amounts of money involved. $____________ (07)

Information in this questionnaire has been provided by the following persons:

Director of Athletics________________________

Director of Intramurals________________________

Director of Physical Education________________________

Director of Recreation and/or Club Activities________________________

Please complete all sections of this questionnaire
and return to:
Program Survey
The National Collegiate Athletic Association
P.O. Box 1906
Mission, Kansas 66201
DEADLINE: SEPTEMBER 30, 1982

Signed________________________
(Person responsible for completion of questionnaire)

Title________________________

Date________________________

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3. INTERCOLLEGIATE ATHLETICS AND CLUB SPORTS—MEN.

(NOTE: A sport is "Intercollegiate" when (1) it is administered and recognized as a varsity sport by the department of intercollegiate athletics, (2) the eligibility of student-athletes is certified by the institutional authority which determines eligibility for all varsity sports and (3) varsity letters or insignias are awarded to the participants. Any sport which does not meet all of these criteria should be classified as a "club sport." In the club sport category below, please indicate source of financing of each club sport by placing a check mark in the appropriate blank(s) as indicated by the number headings: 1 General Budget, 2 Intercollegiate Athletics, 3 Physical Education Budget, 4 Student Fees, 5 Members' Dues.)

Sport	INTERCOLLEGIATE ATHLETICS—MEN—1981-82						CLUB SPORTS—MEN—1981-82						
	Number of Contests			*Number of Student-Athletes*			*Number of Teams*	*Number of Participants*	*Source of Financing (see above)*				
	Varsity	*JV*	*Frosh*	*Varsity*	*JV*	*Frosh*			1	2	3	4	5
Archery (001-009)													
Badminton (010-018)													
Baseball (019-027)													
Basketball (028-036)													
Bicycling (037-045)													
Bowling (046-054)													
Boxing (055-063)													
Canoeing (064-072)													
Chess (073-081)													
Crew (082-090)													
Cricket (091-099)													
Cross Country (100-108)													
Fencing (109-117)													
Field Hockey (118-126)													
Football (Tackle) (127-135)													
Football (Touch) (136-144)													
Golf (145-153)													
Gymnastics (154-162)													
Handball (163-171)													
Horsemanship (172-180)													
Ice Hockey (181-189)													
Judo-Karate (190-198)													
Lacrosse (199-207)													
Paddleball (208-216)													
Pistol (217-225)													
Rifle (226-234)													
Rugby (235-243)													
Sailing (244-252)													
Skiing (253-261)													
Skin Diving (262-270)													
Soccer (271-279)													
Softball (280-288)													
Squash (289-297)													
Swimming (298-306)													
Table Tennis (307-315)													
Tennis (316-324)													
Track and Field (325-333)													
Volleyball (334-342)													
Water Polo (343-351)													
Weight Lifting (352-360)													
Wrestling (361-369)													
______________(370-378)													
______________(379-387)													
______________(388-396)													

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4. INTERCOLLEGIATE ATHLETICS AND CLUB SPORTS—WOMEN.

(NOTE: A sport is "intercollegiate" when (1) it is administered and recognized as a varsity sport by the department of intercollegiate athletics, (2) the eligibility of student-athletes is certified by the institutional authority which determines eligibility for all varsity sports and (3) varsity letters or insignias are awarded to the participants. Any sport which does not meet all of these criteria should be classified as a "club sport." In the club sport category below, please indicate source of financing of each club sport by placing a check mark in the appropriate blank(s) as indicated by the number headings: 1 General Budget, 2 Intercollegiate Athletics, 3 Physical Education Budget, 4 Student Fees, 5 Members' Dues.)

	Intercollegiate Athletics—Women—1981-82						Club Sports—Women—1981-82						
	Number of Contests			Number of Student-Athletes			Number of Teams	Number of Participants	Source of Financing (see above)				
Sport	*Varsity*	*JV*	*Frosh*	*Varsity*	*JV*	*Frosh*			1	2	3	4	5
Archery (001-009)													
Badminton (010-018)													
Baseball (019-027)													
Basketball (028-036)													
Bicycling (037-045)													
Bowling (046-054)													
Canoeing (055-063)													
Chess (064-072)													
Crew (073-081)													
Cricket (082-090)													
Cross Country (091-099)													
Fencing (100-108)													
Field Hockey (109-117)													
Football (Tackle) (118-126)													
Football (Touch) (127-135)													
Golf (136-144)													
Gymnastics (145-153)													
Handball (154-162)													
Horsemanship (163-171)													
Ice Hockey (172-180)													
Judo-Karate (181-189)													
Lacrosse (190-198)													
Paddleball (199-207)													
Pistol (208-216)													
Rifle (217-225)													
Rugby (226-234)													
Sailing (235-243)													
Skiing (244-252)													
Skin Diving (253-261)													
Soccer (262-270)													
Softball (271-279)													
Squash (280-288)													
Swimming (289-297)													
Table Tennis (298-306)													
Tennis (307-315)													
Track and Field (316-324)													
Volleyball (325-333)													
Water Polo (334-342)													
Weight Lifting (343-351)													
Wrestling (352-360)													
________ (361-369)													
________ (370-378)													
________ (379-387)													
________ (388-396)													

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8. INTRAMURALS, PHYSICAL EDUCATION, INFORMAL RECREATION.

(NOTE: Please indicate below the number of male and female students who participated in each of the activities of the intramural program, the required physical education program and informal recreation programs during 1961-62. In the informal recreation section, please define the "other" individuals or groups who participated, such as graduate students, faculty, townspeople, community organizations, etc.)

	Intramurals		Phys. Ed.		Informal Recreation			
	Students		Students		Students			
Sport	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Others*	*Define "Others"*
Archery (001-007)								
Badminton (008-014)								
Baseball (015-021)								
Basketball (022-028)								
Bicycling (029-035)								
Billiards (036-042)								
Bowling (043-049)								
Boxing (050-056)								
Cageball (057-063)								
Canoeing (064-070)								
Chess (071-077)								
Crew (078-084)								
Cross Country (085-091)								
Deck Tennis (092-098)								
Fencing (099-105)								
Fieldball (106-112)								
Field Hockey (113-119)								
Football Skills (120-126)								
Football (Tackle) (127-133)								
Football (Touch) (134-140)								
Free Throwing (141-147)								
Golf (148-154)								
Gymnastics (155-161)								
Handball (162-168)								
Horsemanship (169-175)								
Horseshoes (176-182)								
Ice Hockey (183-189)								
Judo-Karate (190-196)								
Lacrosse (197-203)								
Paddleball (204-210)								
Pistol (211-217)								
Rifle (218-224)								
Rugby (225-231)								
Sailing (232-238)								
Shuffleboard (239-245)								
Skiing (246-252)								
Skin Diving (253-259)								
Skish (260-266)								
Soccer (267-273)								
Softball (274-280)								
Speedball (281-287)								
Squash (288-294)								
Swimming (295-301)								
Table Tennis (302-308)								
Tennis (309-315)								
Track and Field (316-322)								
Turkey Trot (323-329)								
Volleyball (330-336)								
Water Basketball (337-343)								
Water Polo (344-350)								
Weight Lifting (351-357)								
Wrestling (358-364)								
______________ (365-371)								

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6. REQUIRED PHYSICAL EDUCATION

	1	2	3	4	*Other*	
Number of years of required physical education for men:	____	____	____	____	______	(01)

Number of students involved, 1961-62 ______________________ (02)

	1	2	3	4	*Other*	
Number of years of required physical education for women:	____	____	____	____	______	(03)

Number of students involved, 1961-62 ______________________ (04)

Does your institution regularly give physical tests to its students? Yes______ No______ (05)

7. PERSONNEL

	Number Full Time	*Number Part Time*
Intercollegiate Athletics		
Director or Chairman	________ (01)	________ (02)
Assistant Director	________ (03)	________ (04)
Business Manager	________ (05)	________ (06)
Athletic Trainer	________ (07)	________ (08)
Sports Information Director	________ (09)	________ (10)
Coaches (all sports, count individual once)	________ (11)	________ (12)
Student Managers (all sports, count individual once)	________ (13)	________ (14)
Intramural Sports		
Director or Chairman	________ (15)	________ (16)
Assistant Director	________ (17)	________ (18)
Assistants (staff)	________ (19)	________ (20)
Assistants (student)	________ (21)	________ (22)
Physical Education		
Director or Chairman	________ (23)	________ (24)
Assistant Director	________ (25)	________ (26)
Teachers (staff)	________ (27)	________ (28)
Student (assistants)	________ (29)	________ (30)
______________	________ (31)	________ (32)
Clubs		
Director or Chairman	________ (33)	________ (34)
Assistant Director	________ (35)	________ (36)
Assistants (staff)	________ (37)	________ (38)
Assistants (student)	________ (39)	________ (40)
Faculty Supervisor	________ (41)	________ (42)
______________	________ (43)	________ (44)

Intercollegiate Coaches by Sports—(NOTE: If an individual coaches more than one intercollegiate sport, he or she should be counted separately in each sport coached. Include graduate assistant and student assistant coaches.)

	Total Number		*Total Number*		*Total Number*
Archery	______(45)	Football (Touch)	______(60)	Soccer	______(75)
Badminton	______(46)	Golf	______(61)	Softball	______(76)
Baseball	______(47)	Gymnastics	______(62)	Squash	______(77)
Basketball	______(48)	Handball	______(63)	Swimming	______(78)
Bicycling	______(49)	Horsemanship	______(64)	Table Tennis	______(79)
Bowling	______(50)	Ice Hockey	______(65)	Tennis	______(80)
Boxing	______(51)	Judo-Karate	______(66)	Track and Field	______(81)
Canoeing	______(52)	Lacrosse	______(67)	Volleyball	______(82)
Chess	______(53)	Paddleball	______(68)	Water Polo	______(83)
Crew	______(54)	Pistol	______(69)	Weight Lifting	______(84)
Cricket	______(55)	Rifle	______(70)	Wrestling	______(85)
Cross Country	______(56)	Rugby	______(71)	__________	______(86)
Fencing	______(57)	Sailing	______(72)	__________	______(87)
Field Hockey	______(58)	Skiing	______(73)	__________	______(88)
Football (Tackle)	______(59)	Skin Diving	______(74)	__________	______(89)

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8. FACILITIES AND USE

Indoor Facility	*Number, 1971-72*	*Valuation of Current Facility*	*Number Under Construction, 1971-72*	*Number Approved, But Construction Not Started*
Archery ranges	______ (001)	$______ (002)	______ (003)	______ (004)
Basketball courts	______ (005)	$______ (006)	______ (007)	______ (008)
Bowling lanes	______ (009)	$______ (010)	______ (011)	______ (012)
Golf driving ranges	______ (013)	$______ (014)	______ (015)	______ (016)
Gymnasiums—field houses	______ (017)	$______ (018)	______ (019)	______ (020)
Handball courts	______ (021)	$______ (022)	______ (023)	______ (024)
Ice rinks	______ (025)	$______ (026)	______ (027)	______ (028)
Rifle ranges	______ (029)	$______ (030)	______ (031)	______ (032)
Roller rinks	______ (033)	$______ (034)	______ (035)	______ (036)
Running tracks	______ (037)	$______ (038)	______ (039)	______ (040)
Swimming pools	______ (041)	$______ (042)	______ (043)	______ (044)
Tennis courts	______ (045)	$______ (046)	______ (047)	______ (048)
Wrestling rooms	______ (049)	$______ (050)	______ (051)	______ (052)

Outdoor Facility	*Number, 1971-72*	*Valuation of Current Facility*	*Number Under Construction, 1971-72*	*Number Approved, But Construction Not Started*
Archery ranges	______ (053)	$______ (054)	______ (055)	______ (056)
Baseball diamonds	______ (057)	$______ (058)	______ (059)	______ (060)
Basketball courts	______ (061)	$______ (062)	______ (063)	______ (064)
Camping areas	______ (065)	$______ (066)	______ (067)	______ (068)
Football practice fields	______ (069)	$______ (070)	______ (071)	______ (072)
Football stadiums	______ (073)	$______ (074)	______ (075)	______ (076)
Golf courses	______ (077)	$______ (078)	______ (079)	______ (080)
Golf driving ranges	______ (081)	$______ (082)	______ (083)	______ (084)
Golf greens	______ (085)	$______ (086)	______ (087)	______ (088)
Ice rinks	______ (089)	$______ (090)	______ (091)	______ (092)
Lakes	______ (093)	$______ (094)	______ (095)	______ (096)
Play areas	______ (097)	$______ (098)	______ (099)	______ (100)
Ski slopes	______ (101)	$______ (102)	______ (103)	______ (104)
Soccer fields	______ (105)	$______ (106)	______ (107)	______ (108)
Softball diamonds	______ (109)	$______ (110)	______ (111)	______ (112)
Swimming pools	______ (113)	$______ (114)	______ (115)	______ (116)
Tennis courts	______ (117)	$______ (118)	______ (119)	______ (120)
Tracks	______ (121)	$______ (122)	______ (123)	______ (124)
Trapshooting	______ (125)	$______ (126)	______ (127)	______ (128)

Total Valuations: Indoor facilities $______ Outdoor facilities $______ TOTAL $______ (129-131)

Use—(NOTE: Please complete this section if you make your facilities available to outside agencies for physical activities. Indicate the average number of participants in each group.)

Do you permit the use of your facilities by outside agencies for physical activities? Yes______ No______ (132)

Name of Group	*Average Number*	*Name of Group*	*Average Number*
Alumni groups	______ (133)	Future Farmers Assn.	______ (148)
Amateur Athletic Union	______ (134)	Girls State	______ (149)
American Legion	______ (135)	Handicapped children's groups	______ (150)
American Red Cross	______ (136)	High school athletics	______ (151)
Armed Forces	______ (137)	Jaycees	______ (152)
Boy Scouts	______ (138)	Junior colleges	______ (153)
Boys clubs	______ (139)	Government employee groups	______ (154)
Boys State	______ (140)	Government welfare groups	______ (155)
Businessmen's groups	______ (141)	Police associations	______ (156)
Chamber of Commerce	______ (142)	Private recreation clubs	______ (157)
Church groups	______ (143)	Trade unions	______ (158)
Community Recreation Assn.	______ (144)	VFW	______ (159)
Community service clubs	______ (145)	Women's clubs	______ (160)
Faculty clubs	______ (146)	YMCA, YWCA	______ (161)
4-H clubs	______ (147)	______	______ (162)

Type of Activity

___(163) Badminton
___(164) Baseball
___(165) Basketball
___(166) Clinics (all sports)
___(167) Cross Country
___(168) Dancing
___(169) Football
___(170) Free Play
___(171) Ice Hockey
___(172) Ice Skating
___(173) Golf
___(174) Judo-Karate
___(175) Lacrosse
___(176) Physical Fitness
___(177) [illegible]
___(178) [illegible]
___(179) [illegible] Skating
___(180) Soccer
___(181) Softball
___(182) Swimming
___(183) Tennis
___(184) Track
___(185) Volleyball
___(186) Wrestling
___(187) ______

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APPENDIX E

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